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ABSTRACT

This curriculum guide contains 24 instructional units organized in four sections. The sections cover the following topics: introduction to allied health careers, health/wellness, basic sciences, and basic anatomy and physiology. Each unit contains eight basic components: performance objectives, suggested activities for the teacher, supplements, transparency masters, information sheets, assignment sheets, job sheets, tests, and answers to tests and assignment sheets. (Depending on the specific objectives, there may or may not be transparency masters, supplements, assignment sheets, or job sheets included in the unit of instruction.) All of the unit components focus on measurable and observable learning outcomes and are designed to be used in more than one lesson or class period of instruction. (KC)

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Allied Health Careers
Instructional Supplement

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Stillwater, Oklahoma

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Items in this Instructional Supplement may be duplicated as required for classroom use.

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DEDICATION

An involvement in health occupations requires a love of humanity. My own concern for humanity comes from being reared in a loving, accepting atmosphere. This book is dedicated in loving memory to my mother, Betty Penman Duncan. She and my father, Alexander Duncan, encouraged and supported my every endeavor. Without them, this book could not have been written; for they gave me the courage to try and the strength to fail.

B.D.

ALLIED HEALTH CAREERS

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FOREWORD

The Allied Health Careers program is an exploratory program that provides the student an opportunity to learn the many occupations currently available in the health-related areas. With technological advances and changes in the health-care delivery system, students need to know what health occupations are available to them. After completion of this program, the student should be aware of the many health-related occupations and have some clinical experience in at least one area of interest.

In Oklahoma, vocational educators believe that quality vocational programs require the use of sound instructional materials. The core content of the Allied Health Careers material was developed and validated through the efforts of health care industry representatives, health occupation education teachers, the teacher educator for health, and the Health Occupations Education Division of the State Department of Vocational and Technical Education.

This material is a foundation for preparing students in any health-related field. Rather than being occupationally specific, it is designed to include a core content applicable to any area in health occupations. The content in this guide can be supplemented and individualized for the student's particular area of interest.

It is our sincere wish that this curriculum guide will contribute to the development of competent, informed health care workers.

Roy Peters, Jr., Director
Oklahoma State Department of
Vocational and Technical Education

Mary Randall, State Supervisor
Health Occupations Education Division
Oklahoma State Department of
Vocational and Technical Education

PREFACE

In recent years health occupations have undergone major changes. Health care delivery systems have changed, with technology advances rapidly giving us new methods of treatment, new diagnostic procedures, and faster methods of processing information. With these changes there is a constant need for knowledgeable, competent health care workers.

Allied Health Careers contains the core content necessary for any occupation within the health-related area. Some of these areas include nursing, laboratory, respiratory care, radiology, medical office, coding, veterinary, dietary, wellness, and pharmacy. At the completion of the course, the students will know what occupations are available, have investigated their areas of interest, and have a base of knowledge that can be applied to any health occupation. A skilled instructor will be able to supplement, personalize, and localize this material to meet the specific training needs of the individual student.

Betty Duncan, Health Occupations
Curriculum Specialist
Curriculum and Instructional
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Oklahoma State Department of
Vocational and Technical Education

ACKNOWLEDGEMENTS

The development of this material has truly been a group project, and without the assistance of the many people who gave their time and expertise, this manual would not be a reality.

Jerry Weir, my editor, assisted me every step of the way throughout this project. She has been my teacher, supporter, critic, and friend. She tempered my haste and created many innovative items to improve the curriculum. Thanks to her attention to detail, diligence, dedication, and creativity, this manual is one I can be proud of.

Special thanks also go to Susan Walker, CIMC Technical Writer, who assisted in writing some of the anatomy and physiology units and was always available to help me with my writing skills.

Throughout the development of this book, I was also guided by an able panel of experts from both industry and education. This committee reviewed the completed materials for technical accuracy, teachability, currency, and industry relevance. This review committee included the following people:

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Thanks also go to all the Allied Health instructors whom I badgered constantly for information. These people always had the time and the patience to help willingly.

I owe a great deal of gratitude to Roy Peters, Jr., State Director, and Bob Patton, Coordinator of the CIMC, for giving me the opportunity to develop this material.

Thank-you goes to the CIMC staff who were always there to answer my many questions, especially Terri Barnes, Sue Buck, Robert Hilley, Sheila Stone, Marsha Sneed, and Joyce Sawatzky, who—in spite of her busy schedule—always gave me the "minute" I asked for. Lois Heid, film librarian, spent many hours getting films for me to preview. The CIMC library staff— Peggy Murphy, Toni Battles, and Cheerie Jakubek—were also invaluable in getting information for me.

A thank-you goes to Tom Fields for providing the photography. Thank-yous also go to the people who willingly modeled or provided a setting for the photographs: Sande Martin, Allied Health Careers instructor, and her Allied Health Careers students; Ellen Morgan, O.S.U. Veterinary Medicine, who assisted in many different ways; Mary Reagan, Radiologic Technology instructor; Carolyn Paugh of Dr. Darrell Sadler's office; Stillwater Medical Center; Jack Razook of Razook's Drug; state staff members Jim Aulger, Alan Barker, Bunnie Bond, Beth Cope, Keith Harp, Craig Maile, Terrell Ogilvie, Joyce Sawatzky, Marsha Sneed, Susan Walker, and Jerry Weir.

I am also grateful to those in the Communications Center, especially Debbie Hixson, Stephanie Smola, and Lisa Tomlinson, who prepared the many drafts of this manual.

The illustrations for this publication came from a number of sources. The CIMC is thankful to the many companies and publishers, identified by permission lines accompanying many of the illustrations, who contributed artwork. We are also grateful for the work done by the Art Department. Thank you, Gary Bradley, Bob Davis, Kim Hale, Kathryn Hansen Moore, Suzanne Morris, Robert Randall, Scott Stone, and Suzie Tannahill.

Completing this book would not have been possible without the dedication and skills of the CIMC secretarial staff, especially Bunnie Bond, Beth Cope, Anita Kroth, and Suzanne Perry.

The quality of the published product is the result of the care and talents of the Print Shop personnel.

My predecessor, Jamee Trotter, has assisted in any way she could; and for that I am thankful.

My gratitude also goes to Kathy Barker for being kind enough to review some of the units.

I am thankful to my friends out-of-state who gave their expertise and assistance long distance: Cathy Bolton, Louise Gilbert, Nita Patterson, and Doris Smith.

A special thank-you goes to Patti Coats Al-Abed for reading sections of the book for cohesion and comprehension, and willingly and patiently being a sounding board.

Last, but not least, a special thanks to my family who have always been a never-ending source of support, and for understanding why I was erratic in writing home.

It is my sincere hope that these materials will be of value to Allied Health Careers instructors, and that they benefit those students who pursue careers in this vital and rewarding field.

Betty Duncan

USE OF THIS PUBLICATION

Instructional Units

Allied Health Careers contains four sections and twenty-four instructional units. The format includes eight basic components that form a unit of instruction: performance objectives, suggested activities for the teacher, supplements, transparency masters, information sheets, assignment sheets, job sheets, tests, and answers to tests and assignment sheets. Depending on the specific objectives, there may or may not be transparency masters, supplements, assignment sheets, or job sheets included in the unit of instruction.

All of the unit components "zero in" on measurable and observable learning outcomes. Teachers are encouraged to supplement, personalize, localize, and motivate with these materials in order to develop a complete teaching/learning process.

Units of instruction are designed for use in more than one lesson or class period of instruction. Careful study of each unit of instruction by the teacher will help him or her determine the following

- Amount of material that can be covered in each class period
- Skills that must be demonstrated
  - Supplies and equipment needed
  - Amount of practice needed
  - Amount of class time needed for demonstrations
- Supplementary materials, such as pamphlets and filmstrips, that must be ordered
- Resource people to contact

Performance Objectives (white pages in Instructional Workbook)

Performance objectives are stated in two forms: unit objectives, stating the subject matter to be covered in a unit of instruction; and specific objectives, stating the performance necessary to reach the unit objective. Since the objectives of the unit provide direction for the teaching/learning process, it is important that teachers and students have a common understanding of the intent of the objectives.

The objective sheet should be given to students and referred to throughout the teaching/learning process. This will help answer any questions concerning performance requirements for each instructional unit. The objectives can also help determine teaching strategies and instructional methods. Prepare for each unit by deciding how each objective can best be taught.

The objective sheet may also be used as a quick pretest to determine students' prior knowledge and to determine whether further study or activities are necessary. Teachers should feel free to modify, delete, or add objectives in order to meet the needs of the students and community. When changes in objectives are made, the teacher should remember to supply the needed information, assignment and/or job sheets, and criterion test items.

Suggested Activities (pink pages in Instructional Supplement)

Suggested activities are included only in teacher materials. The suggested activities pages include an outline of the unit contents and an instructor's guide designed to assist teachers in planning their presentation of the unit. The instructor's guide provides suggestions for delivery and/or presentation during the instructional process. Read the suggested activities before teaching the units so that you can obtain supplemental materials, prepare audiovisual materials, and contact outside resources. Duties of the teacher will vary according to the particular unit.

The references that are listed in the suggested activities are ones used in the development of each unit. They may be used by the teacher to supplement her or his knowledge of the subject area or to help students with particular interests or occupational objectives in the area covered.

The suggested activities section of the unit also includes supplements and transparency masters. Each of these components provides information in a special way. Supplements may consist of motivational materials, review or practice materials such as crossword puzzles and self-tests, or charts and reference materials. Supplements are designed to be copied and distributed to individual class members or to the class as a whole. Suggestions for their use are included in the instructor's guide. Transparencies direct the class' attention to the topic of discussion. Transparencies may present new information, or they may reinforce information presented in the information sheet. They are particularly effective when identification or analysis is necessary. Order transparencies from the Curriculum and Instructional Materials Center, or make transparencies and place them in the notebook where they will be immediately available for use.

Information Sheet (green pages in Instructional Workbook)

The information sheet provides the "must know" content essential for meeting the objectives of the unit. The information is written in a topical-outline form and is keyed to the specific objectives.

Teachers will find that the information sheet serves as an excellent guide for presenting background knowledge necessary to develop the skills specified in the unit objective. The information sheet may also be used for coordination activities and advisory committees.

Students should read the information sheet before the information is discussed in class. Space is provided in margins for students and teachers to add notes that supplement, localize, personalize, or provide motivation for each unit.

Assignment Sheets (brown pages in Instructional Workbook)

Assignment sheets give students a chance at problem solving, self-assessment, and/or practical experience. They assist students in the application of knowledges that are necessary prerequisites to skill development. Assignment sheets may be given to the student for completion in class or may be used for homework assignments. Answer sheets are provided when appropriate and can be used by the student and/or teacher for checking student progress. The scores of those assignment sheets listed in the specific objectives should be averaged with the unit test score, as the skills addressed in these assignment sheets are considered necessary in meeting the unit objective.

Job Sheets (blue pages in Instructional Workbook)

Job sheets are another important segment of a unit of instruction. The job sheets provide a list of equipment, tools, and materials needed to complete a manipulative or psychomotor skill. They describe a step-by-step procedure needed to complete each task or job. Photographs are provided to assist students in achieving the skill.

The teacher should demonstrate to students the procedures outlined in each job sheet. Furthermore, the teacher needs to localize the job sheet according to the equipment and supplies available in the local lab or clinical situation. Job sheets also furnish potential employers with a picture of the skills being taught and the performances they might reasonably expect from a person who has had this vocational instruction.

Job sheet performance should be evaluated by the instructor and averaged with the unit test score, as the skills addressed in the job sheets are considered necessary in meeting the unit objective.

Tests (white pages in Instructional Supplement)

The test provides criterion-referenced evaluation of every objective listed in the unit of instruction. It is crucial to note that both paper/pencil and performance objectives must be evaluated.

It is recommended that the tests be divided into shorter tests covering three or four objectives at a time and given soon after those objectives have been covered. A selection of questions from the units covered may be used for final tests at the end of each term if desired. If objectives have been added, deleted, or modified, be sure to make the changes on the test.

The acceptable response on a unit test, 85 percent in most units, may be raised or lowered to fit the topic or students' ability levels. The percentage applies to the overall score, not to each question. The final unit grade should be obtained by using the paper/pencil score and evaluations of student demonstrations of the desired skills.

Answers to Test and Assignment Sheets (pink pages in Instructional Supplement)

Answers to test and assignment sheets are components designed to assist the teacher in evaluation of student performances.

Index (white pages in both Instructional Workbook and Instruction Supplement)

An index has been placed at the end of the publications for easy reference.

Page Numbering

Each publication from the Curriculum and Instructional Materials Center (CIMC) is assigned a specific abbreviation. For example, *Allied Health Careers* has been abbreviated AHC. The units are then numbered consecutively within each section. An example of a page number is AHC-1-A. Since CIMC publications are loose leaf, this system of page numbering was adopted so that pages from different manuals would not get mixed up.

Methods of Disseminating Material

Material may be given out a unit or page at a time to keep the material before the student always new. Some teachers ask students to furnish a three-ring binder for the units. This is convenient for taking the materials home to study. Upon completion, each unit is then placed in a larger binder. The large binders may be purchased at cost from the CIMC. Some teachers store the materials by units in filing cabinets or boxes until needed. All the units may be given out at once if desired.

The Instructional Workbook contains Performance Objectives, Information Sheets, Assignment Sheets, and Job Sheets. For best results, provide student materials for each student.

The Instructional Supplement contains Suggested Activities, Supplements, Transparency Masters, Answer to Assignment Sheets, and Answers to Tests. Additional Supplements, Assignment and Job Sheets, and Tests may be purchased from the CIMC.

Teaching Methods

It is a challenge to keep students motivated. Supplement the objectives by providing the "why," personal experiences, and current information. Prepare for each unit by deciding how each objective can best be taught. Allow students to become involved in preparing and planning.

Competency Profiles

Competency profiles are folders used to document student performance. The profile contains a list of the specific job competencies that a student should achieve prior to leaving the training program. Competency profiles may be ordered from the State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.

CORRECTIONS AND SUGGESTIONS

The Curriculum and Instructional Materials Center (CIMC) wants to provide vocational instructors and students with materials that are accurate and effective. Although the CIMC strives to maintain the highest standards of development and production, oversights occasionally do occur. If you find any errors in this or other CIMC publications, or have suggestions for improving their usefulness in vocational programs, please notify the CIMC staff. One easy way of pointing out errors is to make a photocopy of the affected page and to indicate the correction on the copy. You can mail the information to the CIMC, where it will be used to correct the publication before the materials are reprinted.

To ensure that the material is updated on a timely basis, it is important that you notify the CIMC of necessary corrections as soon as possible after discovering the error. Do not assume that someone else will notice the error and inform the CIMC; other users may be making the same assumption. Please send corrections and recommendations for improving this publication to the following address:

Assistant Coordinator for Development
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ORIENTATION TO ALLIED HEALTH CAREERS
UNIT I

SUGGESTED ACTIVITIES

I. Unit contents

   A. Objective sheet

   B. Suggested activities

   C. Supplements

      1. Supplement #1 — Glossary of Occupations

      2. Supplement #2 — Professional Organizations

      3. Supplement #3 — A Patient's Bill of Rights

      4. Supplement #4 — Crossword Puzzle

   D. Information sheet

   E. Assignment sheets

      1. Assignment Sheet #1 — Explore A Chosen Health Career

      2. Assignment Sheet #2 — Examine Job Interests

      3. Assignment Sheet #3 — Evaluate An Occupational Selection

      4. Assignment Sheet #4 — Increase Self-Awareness

      5. Assignment Sheet #5 — Complete Self-Assessment Rating

   F. Answers to assignment sheets

   G. Test

   H. Answers to test

II. Instructor's guide

   A. Review unit and plan presentation.

   B. Order or obtain materials to supplement unit.

SUGGESTED ACTIVITIES

1. Order film — "*Is a Career in the Health Services for You?*" Color, 14 minutes, Counselor Films, Incorporated, 1971. Encouraging young people to start thinking about their working future, this film takes a look at the nature of the work and at the important conditions in the great variety of health occupations.

   (NOTE: This film is available to Oklahoma teachers on a free-loan basis. Oklahoma teachers may order from the Oklahoma State Department of Vocational and Technical Education, Film Library, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.

   Out-of-state teachers may order the film from Counselor Films, Incorporated, 1728 Cherry Street, Philadelphia, Pennsylvania 19103.)

2. Make copies of supplements.

3. Obtain latest edition of *Profiles of Health Careers* — This booklet was prepared by the Profiles of Health Careers Task Force; copies were distributed to health teachers, and your local school should have a copy. A limited number of copies are available from Curriculum and Instructional Materials Center, Oklahoma State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.

4. Check your local hospital for current booklets from the American Hospital Association.

5. Order competency profiles.

   (NOTE: Competency profiles for this manual are available from Curriculum and Instructional Materials Center, Oklahoma State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

C. Introduce unit.

- Focus on the diversity of the allied health occupations. Give examples, pointing out the variety of careers that are available.

- Come to class the first day in your own health care uniform. Explain your own health care occupation background.

- Have students mention the careers they think they are interested in at this point.

- Discuss some of the more unusual areas of health care not mentioned by students.

  EXAMPLES: Peace Corps, Red Cross, military, civilian roles in military health care

- Have an EMT unit come visit the class to show its equipment and explain the role of the EMT.

SUGGESTED ACTIVITIES

D. Provide students with objective sheet.

E. Discuss unit and specific objectives.

F. Provide students with information and assignment sheets.

G. Discuss information and assignment sheets.

1. Use Information Sheet, Section I, to discuss terms and definitions associated with allied health careers.

   - Point out distinctions between *work*, *job*, *occupation*, and *career*.
   - Have students complete Supplement #4, the crossword puzzle, to reinforce terms.
   - Discuss different kinds of prostheses such as internal orthopedic prostheses and dental prostheses.

     EXAMPLE: Hip prosthesis, artificial teeth

   - Show examples of prostheses from an orthopedic hospital.

2. Use Information Sheet, Sections II-III, to discuss the personal characteristics needed by health personnel, and the advantages of being in a health career.

   - Have the students brainstorm for other characteristics and advantages.
   - Discuss why those personal characteristics are needed, and discuss the responsibility involved in being a health care worker.
   - Ask the counselor at your school to administer a vocational aptitude test to your students. Relate the students' results to occupations within the health care field.

3. Use Information Sheet, Section IV, to discuss the major areas of emphasis in health careers.

   - Stress that these are only the MAJOR areas of emphasis, and discuss some of the more uncommon areas such as sports medicine or mortuary science.
   - Have representatives from different areas come as guest speakers.
   - Have a representative from a uniform shop show the various types of uniforms that may be worn. Have some of the students model them.
   - Show film, "Is a Career in the Health Services for You?"

SUGGESTED ACTIVITIES

- Use Supplements #1 and #2 and have students complete Assignment Sheets #1 and #2.

  (NOTE: Supplement #1, Glossary of Occupations, was taken from information gathered by Vital Information for Education, and Work [VIEW]. More information can be obtained by contacting VIEW, State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

- Point out that Assignment Sheet #2 will not be scored.

4. Use Information Sheet, Sections V and VI, to discuss various types of health care facilities and agencies.

   - Tour some local health care facilities and agencies.
   - Have students complete Assignment Sheets #3-#5 to gain a better understanding of their own career goals, aspirations, and self-images.
   - Point out that Assignment Sheets #3-#5 will not be scored.
   - Have the students use the VIEW computer disc for occupational exploration.

     (NOTE: This computer disc is available from VIEW, State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

   - Discuss the impact of the U.S. Public Health Department on your own community.

5. Use Information Sheet, Sections VII-IX, to discuss ethics and the legal implications involved in health care.

   - Have a lawyer come to class as a guest speaker to discuss legalities pertaining to health-related occupations.
   - Explain the concept of the Living Will, and ask the students to discuss how they feel about it.

     (NOTE: Refer to Supplements #2 and #3 in The Life Stages.)

   - Stress the importance of adhering to rights of the patient. Give the students Supplement #3 and discuss A Patient's Bill of Rights.
   - Discuss escalations in health care costs.
   - Check physician rates for malpractice insurance in your area.

     EXAMPLE: An obstetrician/gynecologist in a middle-range state may pay $25,000 a year for malpractice insurance.

SUGGESTED ACTIVITIES

6. Discuss Information Sheet, Section X, and ask the students how they think health care will be delivered in the future.

   - Have the students write a paper on a current trend in health care, using newspapers, magazines, or any other source of information.

H. Give test.

I. Reteach and retest if necessary.

J. Complete appropriate section of students' competency profiles.

III. Unit references

A. Simmers, Louise. *Diversified Health Occupations*. Albany, New York: Delmar Publishers Inc., 1983.

B. Sloan, Jamee Reid. *Health Service Careers*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1979.

ORIENTATION TO ALLIED HEALTH CAREERS
UNIT I

SUPPLEMENT #1 — GLOSSARY OF OCCUPATIONS

ANESTHESIOLOGIST — Administers anesthesia to render clients insensible to pain during surgical, obstetrical, and other medical procedures. Examines client to determine surgical risk.

ANIMAL CARETAKER — Attends to animals in kennel. Washes, grooms and feeds, and exercises animals. Cleans kennels and assists with animal treatments.

BIOMEDICAL ELECTRONICS TECHNICIAN — Repairs, calibrates, and maintains medical equipment. Inspects and installs medical equipment.

CHIROPRACTOR — Adjusts spinal column and other articulations of the body to prevent disease and correct abnormalities. Examines patient to determine nature and extent of disorders. Manipulates spine and other involved areas.

CLERK, MEDICAL RECORDS — Compiles and maintains records. Checks records to see if they are complete, and obtains missing data. Keeps records on types of treatment rendered.

CLERK, UNIT — Prepares and compiles records in a hospital nursing unit. Prepares medical records on new patients. Updates patients' medical records. Transcribes doctor's orders. Schedules rest, treatments, and therapy. Orders medications. Records diet instructions. Requisitions supplies and answers the telephone.

CODING CLERK — Converts routine items of information obtained from records and reports into codes for processing by data typing or keypunch units, using predetermined coding systems. Manually records alphabetic or numeric codes in prescribed sequence on worksheet or margin of source document for transfer to punch-card or machine input tape. Works with ICD-9-CM coding, utilizes medical terminology, and has a basic understanding of anatomy and physiology.

CYTOTECHNOLOGIST — Stains, mounts, and studies cells of human body to determine pathological condition. Examines specimen, and diagnoses nature and extent of disease or cellular damage.

DENTAL ASSISTANT — Obtains and records patient's personal information and medical history and records dental treatment rendered. Seats and prepares clients for treatment. Arranges dental instruments and hands them to the dentist. Keeps oral operating area clear.

DENTAL HYGIENIST — Removes calcium deposits and stains from teeth. Applies medicaments to aid in arresting dental decay. Charts conditions of decay and disease for diagnosis and treatment by dentist. Makes impressions for study casts, removes sutures and dressings. May place and remove rubber dams, and provide for temporary restoration.

SUPPLEMENT #1

DENTAL LABORATORY TECHNICIAN — Makes casts and constructs bridges, caps, and other prostheses when prescribed by a dentist. May do research associated with the materials and techniques used in constructing prostheses.

DENTAL OFFICE ASSISTANT — Serves as receptionist/secretary and chairside assistant. Does laboratory work. Makes dental micrographs and does some client teaching.

DENTIST — Diagnoses and treats disease, injuries, and malformations of teeth and gums and related oral structure. Examines patient to determine nature of condition, utilizing x rays, mouth mirrors, explorers, and other diagnostic procedures and instruments. Cleans, files, extracts and replaces teeth, using rotary and hand instruments, dental appliances, medications and surgical implements. Performs corrective surgery of the gums and supporting bones. Extracts teeth and fits artificial dentures designed for the individual patient.

DIETETIC TECHNICIAN — Provides services in food service management. Teaches principles of food and nutrition and provides dietary counseling. Plans menus, standardizes recipes, and tests new products for use in the facility. Supervises food production and services. Selects, schedules, and conducts orientation and in-service programs.

DIETITIAN — Advises and assists personnel in public and private establishments in food service systems and nutritional care of clients. Evaluates and monitors all aspects of food service operation, making recommendations that will provide nutritionally adequate quality food. Plans, organizes, and conducts orientation and in-service educational programs for food service personnel and develops menu patterns. Assesses, develops, implements, and evaluates nutritional care plans; and provides for follow-up.

ELECTROCARDIOGRAPH TECHNICIAN — Works in laboratory or at bedside operating equipment that records activity of the heart. Secures electrodes to patient's body and mounts tracings, which are read by a physician.

ELECTROENCEPHALOGRAPH TECHNICIAN — Works under the supervision of a physician. Records brain waves of patients, using practical electronics in order to help diagnose brain disorders. Aids physician in interpretations and participates in research.

ELECTROMEDICAL EQUIPMENT REPAIRER — Tests and repairs electromedical equipment such as electrocardiographs, electroencephalographs, sterilizers, operating room lamps and tables, and diathermy machines, following schematic diagrams and using hand tools and test meters.

EMBALMER — Prepares bodies for interment. Restores appearance. Injects embalming chemical throughout the body, using the arterial system for distribution.

EMERGENCY MEDICAL TECHNICIAN — Responds to emergency medical calls, evaluates the nature of the emergency and carries out specific diagnostic treatment procedures under orders of a physician. Renders first aid to individuals involved in heart attacks or accidents and to those suffering from shock. Assists victims at the scene of the emergency or in an ambulance enroute to a hospital. Bandages minor cuts and burns, applies artificial respiration or administers oxygen in cases of suffocation and asphyxiation.

SUPPLEMENT #1

FUNERAL DIRECTOR — Arranges and directs funeral services. Coordinates removal of body to mortuary for embalming. Interviews family to arrange details; needs good interpersonal skills. Directs pallbearers in placement and removal of casket from hearse. Leads funeral procession. Directs preparation and shipment of body for out-of-state burial.

GYNECOLOGIST — Diagnoses and treats diseases and disorders of female genital, urinary and rectal organs. Examines patient to determine medical problems, utilizing physical and radiological examination findings, laboratory tests, and patients' statements as diagnostic aids. Prescribes medication, performs surgery, and does patient teaching. May care for patient throughout pregnancy and deliver babies.

HISTOLOGIC TECHNICIAN — Processes tissue from surgery or biopsy and prepares slides for examination by pathologist or histopathologists. Studies human or animal tissue to provide data on body functions or cause and progress of disease.

HOME HEALTH ASSISTANT — Cares for patients in their homes. Changes bed linens, washes and irons patient's laundry, cleans patient's quarters. Purchases, prepares and serves food following prescribed diets. Assists patients into and out of bed, car, or wheelchair, to bathroom; and up and down stairs. Assists patient to bathe, dress, and groom self.

MEDICAL ASSISTANT — Prepares treatment rooms, drapes and positions patient, positions instruments, hands instruments and materials to physician. Sterilizes and cleans instruments. Prepares inventory of supplies, and reorders. Interviews patient, takes vital signs, height and weight. Obtains and records patient's medical history.

MEDICAL LABORATORY ASSISTANT — Performs routine laboratory tests under supervision of a licensed medical technologist, pathologist, or physician. Performs one or more routine laboratory tests in bacteriology, hematology, parasitology, blood-banking, and related work as needed.

MEDICAL OFFICE ASSISTANT — Performs any combination of clerical tasks requiring limited knowledge of systems or procedures. Types bills, statements, receipts, checks, or other documents. Proofreads records or forms. Sorts and files records. Receives money from patients, may take vital signs, height and weight.

MEDICAL RECORD ADMINISTRATOR — Directs the activities of the medical records department of a health care facility. Develops systems for documenting, storing, and retrieving medical information.

MEDICAL RECORD TECHNICIAN — Compiles and maintains medical records of hospital and clinic patients. Reviews medical records for completeness and accuracy. Codes diseases, operations, diagnoses, and treatments. Compiles medical care and census data for statistical reports. Transcribes medical reports. Maintains indexes on patient, disease, operation, and other catagories. Directs routine operation of medical records department. Files, maintains flow of medical records and reports of department. May take records to court.

SUPPLEMENT #1

MEDICAL SOCIAL WORKER — Treats psychosocial problems of patients and their families through counseling and psychotherapy. Assists in the management and treatment of client mental disorders. Assists in obtaining financial help after an illness.

MEDICAL TECHNOLOGIST — Helps in the diagnosis of disease through complete chemical tests on body fluids and tissues. Tests for antibodies. Identifies bacteria and parasites. Classifies hematological abnormalities. Selects correct blood for transfusions.

MEDICAL TRANSCRIBER — Operates typewriter to transcribe letters, reports, or other recorded data on transcribing machine. Reads charts to determine length of message and corrections to be made; uses word processing equipment for transcription.

MORTUARY ASSISTANT — Assists the funeral director and embalmer in the care of the dead. Assists with the funeral service and helps grieving family and friends.

NEUROLOGIST — Diagnoses and treats organic diseases and disorders of the nervous system. Orders and studies results of chemical, microscopic, biological and bacteriological analyses of patient's blood and cerebrospinal fluid to determine nature and extent of disease or disorder. Orders and studies results of electroencephalograms or x rays to detect abnormalities in brain-wave patterns or abnormalities in brain structure.

NUCLEAR MEDICAL TECHNOLOGIST — Prepares, administers, and measures isotopes for diagnostic and tracer studies in the body or body products such as blood or urine to detect and treat disease. Validates data from patient's records and makes calculations for in vivo studies. Prepares stock solutions of radioactive materials and calculates the doses to be administered. Explains the nature of the test to the patient. Assists patient in assuming required position for testing.

NURSE ASSISTANT — Performs bedside care not requiring professional training. Works under the supervision of a professional or technical nurse. Answers signal lights and bells to determine patient's needs. Transports patient to treatment units. May apply compresses and hot water bottles.

NURSE, LICENSED PRACTICAL — Helps care for physically or mentally ill persons. Provides bedside care. Takes and records vital signs, changes dressings, and administers medications. Performs special nursing procedures and operates sophisticated equipment to provide care. Provides complex nursing care to relatively stable patients. Works under the direction of the registered nurse or physician.

NURSE, REGISTERED — Meets the educational, legal, and training requirements to practice as a professional nurse, as required by a State Board of Nursing. Renders general nursing care to patients in hospital or infirmary. Prepares equipment and aids physician during treatments and examinations of patients. May work in medical doctor's offices, clinics, or nursing homes. Assists in operating rooms. May instruct in nursing education programs.

SUPPLEMENT #1

NURSE, SCHOOL — Plans and carries out policies, standards, and objectives of school health programs in cooperation with medical authority and administrative school personnel. Participates in medical examinations and reviews findings to evaluate health status of pupils and progress of program. Instructs classes in subjects such as child care, first aid, and home nursing; and establishes nursing policy to meet emergencies.

NURSING DIRECTOR COMMUNITY HEALTH — Administers nursing service in community health agency. Coordinates and evaluates nursing activities in agency to insure balanced and adequate program. Formulates progressive programs designed to meet changing needs of community. Directs collection, analysis, and interpretation of statistics significant to program planning and budget estimates for nursing activities. Establishes programs for guidance and professional development of staff.

OBSTETRICIAN — Treats women during prenatal, natal, and postnatal periods. Examines patients to ascertain condition, utilizing physical findings, laboratory results, and patient's statements as diagnostic aids. Determines need for modified diet and physical activities and recommends plan. Periodically examines patient, prescribing medication or surgery if indicated. Delivers infant and cares for mother for prescribed period of time following childbirth.

OCCUPATIONAL THERAPIST — Evaluates the self-care, work, and leisure skills of well and disabled clients of all ages. Plans and implements programs and social interpersonal activities designed to restore, develop, maintain the client's ability to accomplish daily living tasks satisfactorily for that person's age and occupation. Evaluates and treats problems resulting from physical illness or injury, emotional disorders, congenital or developmental disabilities, or the aging process.

OCCUPATIONAL THERAPY ASSISTANT — Works under the supervision of an occupational therapist in evaluating client's skills and in planning and implementing programs designed to restore or develop a client's self-care, work, and leisure skills.

OPHTHALMOLOGIST — Diagnoses and treats defects, injuries, and diseases of the eye. Performs eye surgery.

OPTICIAN, DISPENSING — Designs, fits, and adapts lenses and frames, utilizing optical prescription. Analyzes prescription in conjunction with client's vocational and avocational visual requirements. Recommends specific lenses for safety and efficiency. Measures client's bridge, eye size, and temple length. Prepares work order and instructions for grinding lenses and fabricating spectacles. Verifies exactness of finished lens spectacles.

OPTOMETRIST — Examines people's eyes to detect vision problems, diseases, and other abnormal conditions. Tests to insure that the patient has proper depth and color perception and the ability to focus and coordinate the eyes. Prescribes lenses and treatments when necessary. Where evidence of disease is present, refers the patient to the appropriate health care practitioner. Supplies the prescribed eyeglasses, and fits and adjusts contact lenses.

SUPPLEMENT #1

ORAL SURGEON — Performs surgery on mouth and jaws. Executes difficult and multiple extraction on teeth. Removes tumors and other abnormal growths. Prepares mouth for insertion of dental prosthesis by alveoplasty and revision of oral soft tissue. Corrects abnormal jaw relations by mandibular or maxillary revisions. Sets fractures of jaws. May treat patients in hospital.

ORTHODONTIST — Prevents, diagnoses, and corrects deviations from normal that occur in growth, development, and position of teeth and other dental-facial structures. Utilizes cephalometric and wrist radiograms, height and weight records, and front and lateral dental photographs in planning treatment. Designs intra- and extra-oral appliances to alter position and relationships of teeth and jaws to produce and maintain normal function. Fabricates appliances, such as space maintainers, bite planes, labial and lingual arch wires, and head caps.

ORTHOTIST/PROSTHETIST — Designs, writes specifications for, and fits artificial appliances following the prescription of a physician. Orthotists specialize in planning, making, and fitting orthopedic braces such as leg and neck braces to support weakened body parts or to correct physical defects. Prosthetists specialize in planning, making, and fitting artificial limbs such as arms or legs or parts of arms or legs. An individual may be both an orthotist and prosthetist.

PARAMEDIC — Functions under the physician's orders as specified by law. Exercises considerable independent judgment based on technical training in advanced medical procedures, advanced life support measures, and pharmacology.

PEDIATRICIAN — Plans and carries out medical care program for children from birth through adolescence to aid in mental and physical growth and development. Examines patients to determine presence of disease and to establish preventive health practices.

PHARMACIST — Performs professional level work in filling prescriptions, dispensing drugs, and compounding pharmaceutical preparations. Compounds, manufactures, and dispenses drugs, medications, narcotics, barbiturates, and other pharmaceutical supplies requisitioned by doctors; compounds individual prescriptions as necessary; maintains prescription files. Rejects prescriptions containing dosage believed excessive; consults with physician on revision of prescriptions; may require physician's release of responsibility on overdoses. Keeps abreast of current development and literature; advises physicians of drugs and medications available and the use of alternate drugs.

PHARMACY TECHNICIAN — Prepares labels and directions, stores supplies, cleans equipment used in preparation of pharmaceuticals and work area. Prepares inventory and orders supplies. Unpacks and stores supplies, verifying items against invoices. Delivers drug orders. May compute charges for narcotics and pharmaceuticals dispensed from pharmacy.

PHYSICIAN ASSISTANT — Provides patient services under the supervision of a doctor of medicine or osteopathy who is responsible for the performance of that assistant, who is a skilled practitioner qualified by academic and clinical training.

SUPPLEMENT #1

PHYSICIAN, M.D. — Performs medical examinations, diagnoses disease, and treats people who are suffering from injury or disease. Is concerned with preventive and restorative medicine.

PHYSICIAN, OSTEOPATHIC — Treats disease and injury using all accepted methods, including manipulation, drugs, operative surgery, and physical therapy. Emphasis is on maintenance of health and prevention of disease.

PODIATRIST — Diagnoses and treats disease and deformities of the human foot. Diagnoses foot ailments such as tumors, ulcers, fractures, skin or nail diseases, and congenital or acquired deformities, utilizing diagnostic aids, such as urinalysis, blood tests, and x-ray analysis. Treats deformities such as flat or weak feet and foot imbalance, by mechanical and electrical methods such as whirlpool or paraffin baths and short-wave and low-voltage currents. Treats conditions such as corns, calluses, ingrowing nails, tumors, shortened tendons, bunions, cysts, and abcesses by surgical methods, including suturing, medications, and administration of local anesthetic. Prescribes drugs.

PSYCHIATRIC AIDE — Practices simple nursing procedures. Supervises nonprofessional therapeutic nursing care of the mentally ill. Provides companionship and assists with personal hygiene. Assists mentally ill patients, accompanies patients to shower rooms, and assists them in bathing, dressing, and grooming. Accompanies patients to and from wards for examination and treatment and administers prescribed medications.

PSYCHIATRIST — Deals with prevention, diagnosis, and treatment of mental disorders. Examines patients to determine physical condition, following standard medical procedures. Orders laboratory and other special diagnostic tests and evaluates data obtained.

RADIOLOGIC TECHNOLOGIST — Applies roentgen rays and radioactive substances to patients for diagnostic and therapeutic purposes. Positions patients under x-ray machines, adjusts immobilization devices, affixes lead plates to protect unaffected areas, and administers drugs or chemical mixtures orally or as enemas to render organs opaque.

SANITARIAN, PUBLIC HEALTH — Plans, develops, and executes environmental health programs. Organizes and conducts training programs in environmental health practices for schools and other groups. Determines and sets health and sanitation standards and enforces regulations concerned with food processing and serving, collection and disposal of solid wastes, sewage treatment and disposal, plumbing, vector control, recreational areas, hospitals and other institutions, noise ventilation, air pollution, and other areas.

SECRETARY, MEDICAL — Prepares medical charts and reports for doctor or hospital personnel, utilizing knowledge of medical terminology. May prepare and send bills to patients and record appointments. Answers telephone and places outgoing calls. Schedules appointments. May compose and type routine correspondence.

SUPPLEMENT #1

SPEECH PATHOLOGIST/AUDIOLOGIST

SPEECH PATHOLOGIST — Diagnoses, treats, evaluates, and researches speech and language or hearing problems. Plans, directs, conducts, or participates in remedial, habilitative, and rehabilitative programs including counseling, guidance, auditory training, speech reading, and speech conservation designed to restore or improve communications.

AUDIOLOGIST — Determines the range, nature, and degree of hearing functions related to patient's communication needs, using electroacoustic instrumentation such as puretone and speech audiometers, and galvanic skin response equipment. Coordinates audiometric results with other diagnostic data, such as education, medical, social, and behavioral information.

SURGEON — Performs surgery to correct deformities, repair injuries, prevent diseases, and improve function in patients. Examines patient to verify necessity of operation, estimate possible risk to patient, and determine best operational procedure. Reviews reports of patient's general physical condition, reactions to medications, and medical history. Examines instruments, equipment, and surgical setup to ensure that antiseptic methods have been followed.

SURGICAL TECHNICIAN — Assists medical staff before and during an operation. Prepares operating room supplies according to surgeon's directions. Assembles instruments and operating trays specified by nurse. Helps operating team to put on gown and gloves. Adjusts operating table and positions and drapes patient.

THERAPIST, PHYSICAL — Plans and administers treatment for patients referred by a physician in order to restore bodily functions, relieve pain, or prevent permanent disability following a disabling injury or disease. Patients include accident victims, handicapped children, and stroke victims.

THERAPIST, RESPIRATORY — Administers respiratory therapy care and life support to patients. Sets up and operates devices such as respirators and mechanical ventilators. Observes equipment gauges to ensure that specified volumes are maintained. Performs bronchopulmonary drainage and assists patient in performing breathing exercises.

THERAPY AIDE, PHYSICAL — Prepares patients for treatments by physical therapist. Assists patients in dressing, undressing, and moving about. Sets up and assembles hydrotherapy tanks and vibrators. Changes linens on beds and treatment tables and cleans work area. Assists in fitting corsets, braces, and hand splints. Assists therapist in administration of treatment and administers routine treatments.

UROLOGIST — Diagnoses and treats diseases of genitourinary organs and tract. Examines patient, using x-ray machine, fluoroscope and other equipment, to aid in determining nature and extent of disorder or injury. Treats patient using diathermy machine, catheter, cystoscope radium emanation tube, and similar equipment. Performs surgery when necessary. Prescribes and administers urinary antiseptics to combat infection.

SUPPLEMENT #1

VETERINARIAN — Diagnoses, controls and treats disorders and injuries of animals, both surgically and medically. Determines the nature and the extent of disease or injury and treats animal patients in hospitals, clinics, homes, ranches, or zoos. Performs surgery and dentistry on animals as necessary. Prescribes and administers drugs, medicine, anesthetics and vaccines; sets broken bones; takes blood tests and x rays; dresses and cleans wounds. Tests dairy herds for tuberculosis and brucellosis, and inoculates animals against diseases such as hog cholera and rabies. Inspects animals intended for human consumption, before and after slaughtering.

VETERINARY ASSISTANT — Assists veterinarian in the care and treatment of diseases and disorders of animals. May do simple procedures and routine housekeeping functions such as kennel and cage cleaning. May maintain supplies and equipment. Assists during examination of animals and surgical procedures. May also perform receptionist duties.

ORIENTATION TO ALLIED HEALTH CAREERS
UNIT I

SUPPLEMENT #2 — PROFESSIONAL ORGANIZATIONS

American Academy of Physician Assistants
Suite 300
1117 North 19th Street
Arlington, Virginia 22209

American Alliance for Health, Physical Education, Recreation and Dance
(Formerly American Association for Health, Physical Education and Recreation)
1900 Association Drive
Reston, Virginia 22091

American Association of Medical Assistants
Suite 1575
20 North Wacker Drive
Chicago, Illinois 60606

American Association of Nurse Anesthetists
216 West Higgins Road
Park Ridge, Illinois 60068

American Association for Respiratory Care
1720 Regal Road
Dallas, Texas 75235

American Dental Association
211 East Chicago Avenue
Chicago, Illinois 60611

American Dental Hygienists' Association
444 North Michigan Avenue
Chicago, Illinois 60611

American Dietetic Association
430 North Michigan Avenue
Chicago, Illinois 60611

American Medical Record Association
John Hancock Center
Suite 1850
875 North Michigan Avenue
Chicago, Illinois 60611

American Medical Technologists
710 Higgins Road
Park Ridge, Illinois 60068

SUPPLEMENT #2

American Nurses' Association
2420 Pershing Road
Kansas City, Missouri 64108

American Occupational Therapy Association
Suite 301
1383 Piccard Drive
Rockville, Maryland 20850

American Orthotic and Prosthetic Association
717 Pendleton Street
Alexandria, Virginia 22314

American Pharmaceutical Association
2215 Constitution Avenue, N.W.
Washington, DC 20037

American Physical Therapy Association
1111 North Fairfax Street
Alexandria, Virginia 22314

American Public Health Association
1015 15th Street, N.W.
Washington, DC 20005

American Society of Electroencephalographic Technologists
Sixth at Quint
Carroll, Iowa 51401

American Society for Medical Technology
330 Meadowfern Drive
Houston, Texas 77067

American Society of Radiologic Technologists
15000 Central Avenue, S.E.
Albuquerque, New Mexico 87123

American Veterinary Medical Association
930 North Meacham Road
Schaumburg, Illinois 60196

Association of Surgical Technologists
Caller No. E
Littleton, Colorado 80120

National Funeral Directors Association
11121 West Oklahoma Avenue
Milwaukee, Wisconsin 53227

SUPPLEMENT #2

National Homecaring Council
235 Park Avenue, South
New York, New York 10003

National Registry of Emergency Medical Technicians
P.O. Box 29233
Columbus, Ohio 43229

Society of Nuclear Medicine
475 Park Avenue, South
New York, New York 10016

ORIENTATION TO ALLIED HEALTH CAREERS
UNIT I

SUPPLEMENT #3 — A PATIENT'S BILL OF RIGHTS

The American Hospital Association presents a Patient's Bill of Rights with the expectation that observance of these rights will contribute to more effective patient care and greater satisfaction for the patient, his physician, and the hospital organization. Further, the Association presents these rights in the expectation that they will be supported by the hospital on behalf of its patients, as an integral part of the healing process. It is recognized that a personal relationship between the physician and the patient is essential for the provision of proper medical care. The traditional physician-patient relationship takes on a new dimension when care is rendered within an organizational structure. Legal precedent has established that the institution itself also has a responsibility to the patient. It is in recognition of these factors that these rights are affirmed.

1. The patient has the right to considerate and respectful care.

2. The patient has the right to obtain from his physician complete current information concerning his diagnosis, treatment, and prognosis in terms the patient can be reasonably expected to understand. When it is not medically advisable to give such information to the patient, the information should be made available to an appropriate person in his behalf. He has the right to know, by name, the physician responsible for coordinating his care.

3. The patient has the right to receive from his physician information necessary to give informed consent prior to the start of any procedure and/or treatment. Except in emergencies, such information for informed consent should include but not necessarily be limited to the specific procedure and/or treatment, the medically significant risks involved, and the probable duration of incapacitation. Where medically significant alternatives for care or treatment exist, or when the patient requests information concerning medical alternatives, the patient has the right to such information. The patient also has the right to know the name of the person responsible for the procedures and/or treatment.

4. The patient has the right to refuse treatment to the extent permitted by law and to be informed of the medical consequences of his action.

5. The patient has the right to every consideration of his privacy concerning his own medical care program. Case discussion, consultation, examination, and treatment are confidential and should be conducted discreetly. Those not directly involved in his care must have the permission of the patient to be present.

6. The patient has the right to expect that all communications and records pertaining to his care should be treated as confidential.

7. The patient has the right to expect that within its capacity a hospital must make reasonable response to the request of a patient for services. The hospital must provide evaluation, service, and/or referral as indicated by the urgency of the case. When medically permissible, a patient may be transferred to another facility only after he has received complete information and explanation concerning the needs for and alternatives to such a transfer. The institution to which the patient is to be transferred must first have accepted the patient for transfer.

8. The patient has the right to obtain information as to any relationship of his hospital to other health care and educational institutions insofar as his care is concerned. The patient has the right to obtain information as to the existence of any professional relationships among individuals, by name, who are treating him.

9. The patient has the right to be advised if the hospital proposes to engage in or perform human experimentation affecting his care or treatment. The patient has the right to refuse to participate in such research projects.

10. The patient has the right to expect reasonable continuity of care. He has the right to know in advance what appointment times and physicians are available and where. The patient has the right to expect that the hospital will provide a mechanism whereby he is informed by his physician or a delegate of the physician of the patient's continuing health care requirements following discharge.

11. The patient has the right to examine and receive an explanation of his bill regardless of source of payment.

12. The patient has the right to know what hospital rules and regulations apply to his conduct as a patient.

No catalog of rights can guarantee for the patient the kind of treatment he has a right to expect. A hospital has many functions to perform, including the prevention and treatment of disease, the education of both health professionals and patients, the conduct of clinical research. All these activities must be conducted with an overriding concern for the patient, and, above all, the recognition of his dignity as a human being. Success in achieving this recognition assures success in the defense of the rights of the patient.

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ORIENTATION TO ALLIED HEALTH CAREERS
UNIT I

SUPPLEMENT #4 — CROSSWORD PUZZLE

Test yourself on terms associated with allied health careers by using the clues below to complete the crossword puzzle.

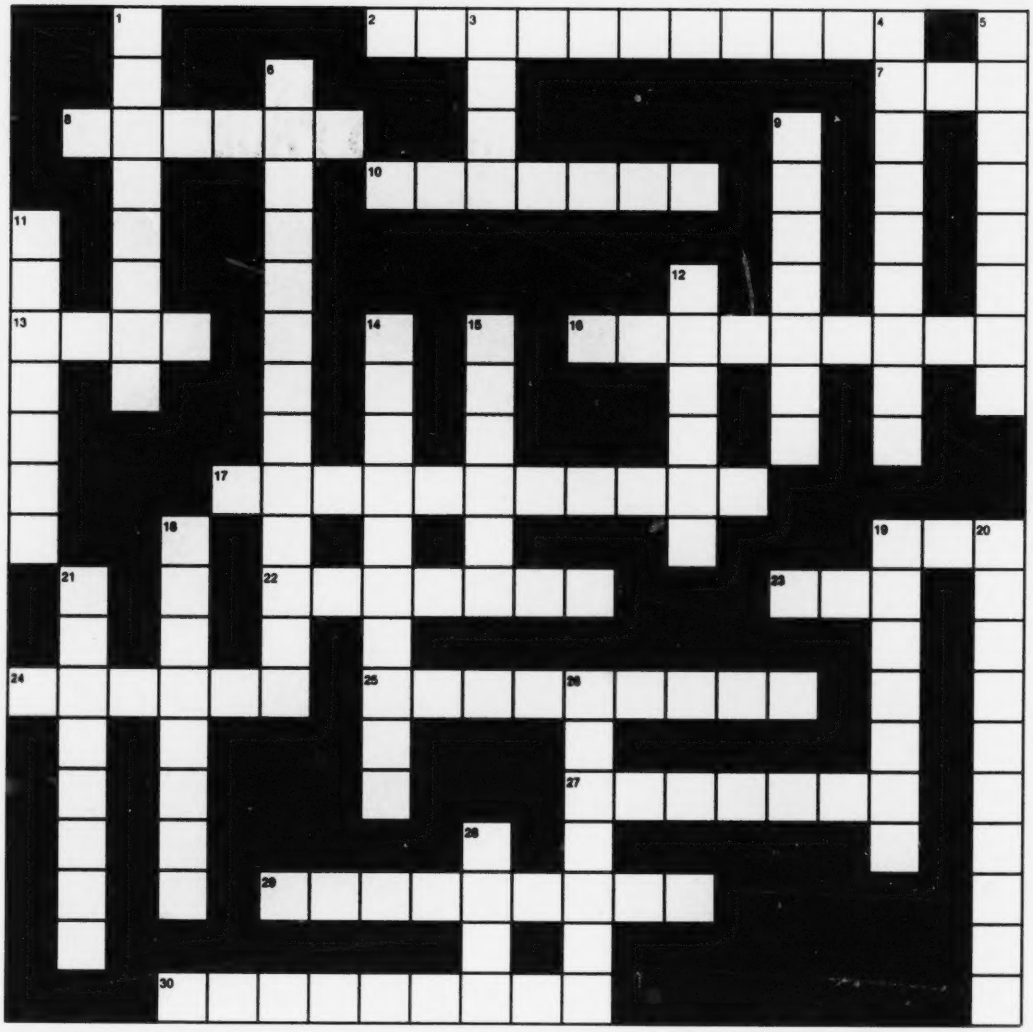
ACROSS

2. Negligent care
7. Noise
8. Progression of one's work
10. Facility that provides care for terminally ill patients
13. Diplomacy; sense of what is appropriate to say or do to avoid offense
16. Preconceived opinion
17. _____________ traits
19. Health maintenance organization (abbr.)
22. Conforming to accepted conduct
23. Preferred provider organization (abbr.)
24. Principles of conduct
25. Warm, caring, genuine approach
27. A nurse's client
29. Health careers pertaining to the tissues of the mouth
30. Type of hospital that specializes in long-term hospitalization and care for specific diseases

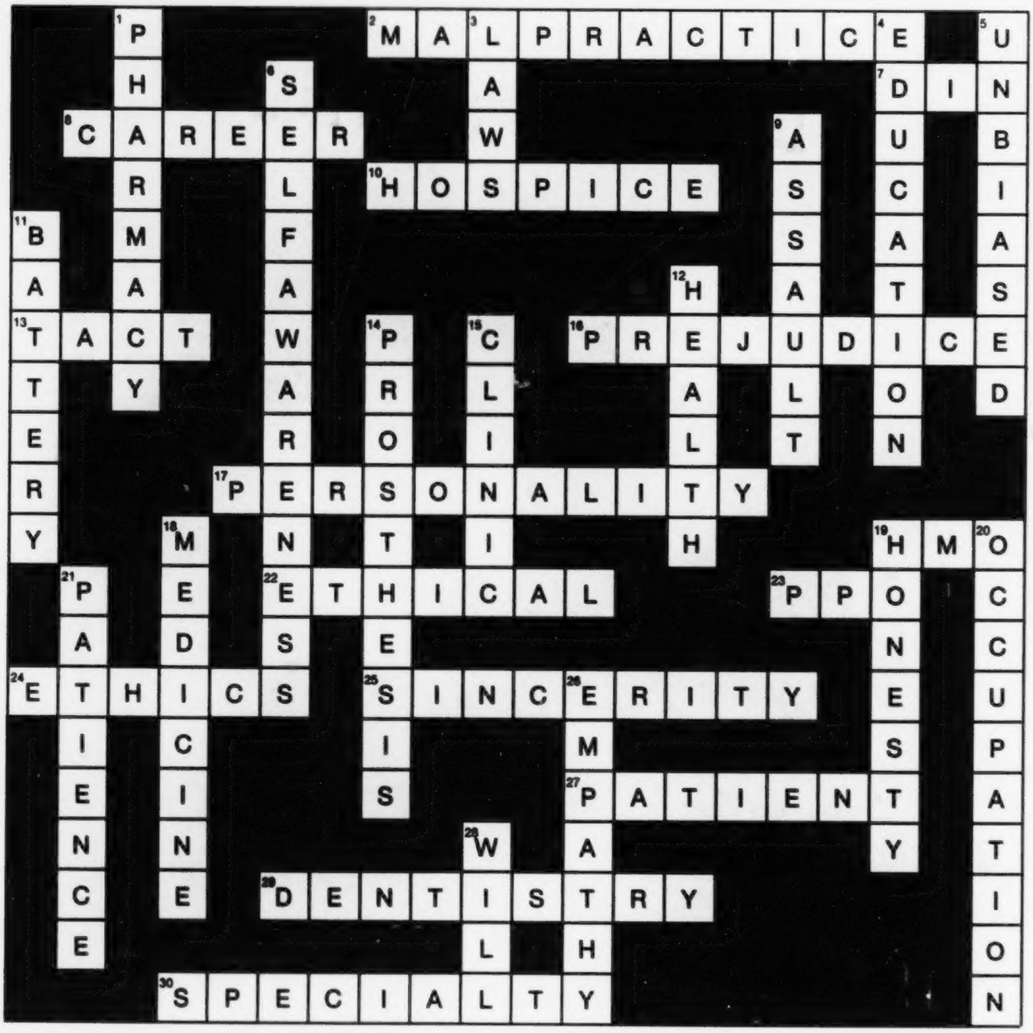
DOWN

1. Health career that deals with preparation and dispensing of medication ordered by the doctor
3. Rules that govern our society
4. Knowledge
5. Free from prejudice
6. Knowing yourself
9. Attempt to injure another person in an illegal manner
11. Unlawful touching of another person without that person's consent
12. Free from illness
14. Artificial part of the body
15. Facility that offers immediate care for minor injuries and illnesses, one-day surgery, and the services of several physicians
18. Health career that deals with the prevention of disease as well as with healing
19. Truthfulness
20. Job that serves as one's regular source of livelihood
21. Understanding and tolerant attitude
26. Understanding another's feelings
28. Legal document concerning a person's property after death

SUPPLEMENT #4



SUPPLEMENT #4



ORIENTATION TO ALLIED HEALTH CAREERS
UNIT I

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1 — Evaluated to the satisfaction of the instructor

Assignment Sheets #2-#5 are not to be evaluated by the instructor

ORIENTATION TO ALLIED HEALTH CAREERS
UNIT I

TEST

NAME ________________________________ SCORE ______________

1. Match to their correct definitions terms associated with orientation to allied health careers. Write the correct numbers in the blanks.

______a. Job that serves as one's regular source of livelihood; a step in an individual's career

______b. Developing slowly and persisting for a long period of time

______c. General course or progression of one's work; the sum of one's occupations

______d. Preconceived judgment or opinion

______e. Ability to recognize one's own values, ambitions, and goals

______f. Conforming to an accepted professional conduct

______g. Therapy designed to relieve or reduce intensity of uncomfortable symptoms, but not to produce a cure

______h. State of complete physical, mental, and social well-being; not merely the absence of disease or infirmity

______i. Recognition and acknowledgment of another person's feelings

______j. Free from all prejudice

______k. Principles of conduct

______l. A person's total reaction to the environment; a person's distinctive individual qualities

1. Health
2. Chronic
3. Palliative care
4. Occupation
5. Self-awareness
6. Personality
7. Career
8. Empathy
9. Unbiased
10. Prejudice
11. Ethics
12. Ethical

2. Name and explain five personal characteristics needed by a person working in a health career.

a. ____

____

TEST

b. ______________________________

____

c. ______________________________

____

d. ______________________________

____

e. ______________________________

____

3. Select from the following list general advantages of being involved in an allied health career. Write an "X" in the blank before each correct answer.

_____a. Nonstressful work environment

_____b. Variety of work

_____c. Professional pride

_____d. Top dollar salary

_____e. Availability of work and geographic mobility

_____f. Opportunity for advancement

_____g. Stable salary and benefits

_____h. Excellent work environment

_____i. National recognition

4. List seven major areas of emphasis in health careers.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

e. ______________________________

f. ______________________________

g. ______________________________

TEST

5. Match health care facilities and agencies to their correct types of services. Write the correct numbers in the blanks.

______a. Medical care, dental care, podiatry care, mental health services

______b. Services of one or more physicians, frequently representing different areas of specialization; immediate care for minor injuries and illnesses; one-day surgery

______c. Basic medical services, social services for the elderly

______d. Preventive health care, basic health services

______e. Short-term hospitalization, emergency care, diagnostic services, medical and surgical services

______f. Research, public education, individual assistance

______g. Community health care; housekeeping services

______h. Medical services of general hospitals, training for health workers, medical research

______i. Long-term hospitalization, care for specific diseases

______j. Public education, water and food purity checks, alcohol and drug abuse control, control and reporting of communicable diseases, maternal and child health services, public health nursing, licensing various health agencies

______k. Long-term care for the elderly, extended-recovery care for the physically ill

______l. Palliative care for terminally ill patients, supportive care for families of terminally ill patients

______m. Therapy for patients who have had a debilitating illness or a loss of limb or organ function; prosthetic fitting and instruction in activities of daily living

1. Convalescent homes
2. Clinics
3. Rehabilitation centers
4. U.S. Public Health Department
5. Volunteer agencies
6. Hospices
7. Health maintenance organizations (HMO)
8. General hospitals
9. Teaching medical centers
10. Home health care agencies
11. Preferred provider organizations (PPO)
12. Specialty hospitals
13. Senior day-care centers

6. Name four of the overall goals of the U.S. Public Health Department.

a. ____

b. ____

c. ____

d. ____

TEST

7. State eight guidelines for ethical behavior.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

e. ______________________________

f. ______________________________

g. ______________________________

h. ______________________________

8. Match to their correct definitions terms associated with legal considerations of health care. Write the correct numbers in the blanks. Definitions are continued on the next page.

______a. Disparaging, unjust statements that endanger a reputation and can be considered legal cause for lawsuit if heard or read by a third person

______b. Threat or attempt to injure another person in an illegal manner

______c. Professional care that is faulty, injurious, negligent, or improper practice

______d. Personal or private information given by a client to medical personnel

______e. Holding or retaining a person against that person's will

______f. Unlawful touching of another person without that person's consent

______g. Giving out facts that could harm a client in any respect, or failure to knock before entering a room

______h. Failure to perform in a reasonably prudent manner

______i. Document stating that the signer does not want life-sustaining measures taken in the event of an incurable, irreversible condition caused by injury or illness

1. Assault
2. Battery
3. Informed consent
4. Defamation
5. False imprisonment
6. Invasion of privacy
7. Malpractice
8. Negligence
9. Privileged communication
10. Reasonable care
11. Will
12. Living will

TEST

_____ j. Legal document that defines the disposition of a person's property and takes effect after that person's death

_____ k. Permission voluntarily granted by a person of sound mind who has been informed of a particular procedure or treatment and all its risks and possible complications

_____ l. Services performed for a client that meet the common standards expected in the community for a comparable worker

9. State five guidelines for avoiding legal implications.

   a. ______________________________

   b. ______________________________

   c. ______________________________

   d. ______________________________

   e. ______________________________

10. List five major trends affecting changes in current health care.

   a. ______________________________

   b. ______________________________

   c. ______________________________

   d. ______________________________

   e. ______________________________

(NOTE: Test item 11 lists an assignment sheet. It is an important part of this test. If it has not been completed, check with your instructor.)

11. Explore a chosen health career.

ORIENTATION TO ALLIED HEALTH CAREERS
UNIT I

ANSWERS TO TEST

1. a. 4
   b. 2
   c. 7
   d. 10
   e. 5
   f. 12
   g. 3
   h. 1
   i. 8
   j. 9
   k. 11
   l. 6

2. Answer should include any five of the following

   (NOTE: The explanations are suggested answers.)

   a. *Honesty*: Honesty is part of the ethical behavior that the health worker must exhibit, for this person is challenged each day with tasks to be performed that relate directly to the care of the client.
   b. *Interest in working with people*: All of the health careers require constant contact with other people, both clients and fellow workers. You must be able to work with all types of people.
   c. *Patience*: Many times the health care worker will be under stress and pressure when dealing with clients. Families and friends of clients, as well as those who are ill and concerned about the nature of their illnesses, may exhibit uncharacteristic behavior. The health care worker will need an understanding and tolerant attitude toward those persons and their behavior.
   d. *Sincerity*: To every client, the health care worker must display a warm, caring, sincere approach without bias or falseness. The client can easily detect insincerity; without sincerity, a therapeutic relationship between client and health care worker will not develop.
   e. *Ability to communicate well*: Good skills are needed when communicating with co-workers personally and over the telephone. Written communication used in documentation of client care must be clear, concise, and accurate, as it has legal implications if the material is ever presented in court.
   f. *Flexibility*: Health is a dynamic, ever-changing field with research constantly showing new types of care and techniques. For this reason the health care worker must be willing to adapt when new information is discovered.
   g. *Responsibility*: Each task gives the health care worker a great deal of responsibility. Being responsible and following directions are another part of ethical behavior exhibited by the health care worker.
   h. *Empathy*: A health care worker needs to be able to understand the emotions of others in order to help them. These feelings must be a true reflection of concern, or the rapport will be lost.
   i. *Tact*: A health care worker needs to be diplomatic. Many times we can hurt or offend someone just by speaking before we think.

3. b, c, e, f, g, h

ANSWERS TO TEST

4. Answer should include any seven of the following

    a. Clinical laboratory service
    b. Dentistry
    c. Dietetics and nutrition
    d. Education
    e. Health services administration
    f. Medicine
    g. Nursing
    h. Pharmacy
    i. Mental health, mental illness
    j. Technical instrumentation
    k. Therapy
    l. Veterinary medicine
    m. Vision care

5. a. 11
    b. 2
    c. 13
    d. 7
    e. 8
    f. 5
    g. 10
    h. 9
    i. 12
    j. 4
    k. 1
    l. 6
    m. 3

6. Answer should include any four of the following

    a. Perform research in diseases that kill, handicap, or cripple
    b. Prevent and treat alcohol and drug abuse
    c. Prevent and control diseases that are transmitted by insects, animals, air, water, and people
    d. Maintain standards for food and drug purity
    e. Plan more effective ways to deliver health services
    f. Help make quality care more available and affordable by encouraging health personnel to work in underserved areas

7. Answer should include any eight of the following

    a. Be loyal to employer, co-workers, and clients
    b. Perform only those procedures or treatments that you are qualified to perform
    c. Be sincere, honest, and trustworthy in the performance of your tasks
    d. Practice sound health habits
    e. Give the same level of care to all clients regardless of race, creed, color, national origin, or handicap
    f. Respect the privacy of others

ANSWERS TO TEST

g. Carry out your assigned tasks
h. Refuse to accept money or expensive gifts from clients
i. Take proper care of equipment and supplies
j. Know the policies of the health care facility, and follow them exactly
k. Treat all clients with compassion, kindness, and respect

8.	a.	4	g.	6
	b.	1	h.	8
	c.	7	i.	12
	d.	9	j.	11
	e.	5	k.	3
	f.	2	l.	10

9. Answer should include any five of the following

a. Never perform a procedure or treatment that is not approved by your instructor
b. Always have a doctor's order before applying protective devices
c. Remember that anything written in a client's record is considered a legal document
d. Protect the client's rights
e. Do not threaten anyone under your care
f. Refer all requests for information about a client to the supervisor

10. a. Home health care
b. Wellness programs
c. Entrepreneurship
d. Advancing technology
e. Cross-trained or multiskilled personnel
f. Group homes

11. Evaluated to the satisfaction of the instructor

TECHNIQUES OF LEARNING
UNIT II

SUGGESTED ACTIVITIES

I. Unit contents
    A. Objective sheet
    B. Suggested activities
    C. Supplement
        1. Supplement #1 — Lecture on Learning Techniques
        2. Supplement #2 — Crossword Puzzle
    D. Transparency Master: TM #1 — Diagram of Key Ideas
    E. Information sheet
    F. Assignment sheets
        1. Assignment Sheet #1 — Evaluate Study Habits
        2. Assignment Sheet #2 — Use Techniques for Remembering
        3. Assignment Sheet #3 — Take Notes on a Classroom Lecture
        4. Assignment Sheet #4 — Use a Dictionary
        5. Assignment Sheet #5 — Examine Book Components
        6. Assignment Sheet #6 — Complete a Reading Assignment, Using a Reading System
        7. Assignment Sheet #7 — Use Library Skills to Research a Health Topic
    G. Answers to assignment sheets
    H. Test
    I. Answers to test

II. Instructor's guide
    A. Order materials to supplement unit.
        1. Films
            a. *Studying — A Way to Learn*. Color, 14 minutes, Barr Films, 1985. A teacher gives a crash course on how to study, beginning in the classroom and continuing at home. Shows how good study habits can make learning fun.

SUGGESTED ACTIVITIES

(NOTE: This film is available to Oklahoma teachers on a free-loan basis. Oklahoma teachers may order from the Oklahoma State Department of Vocational and Technical Education, Film Library, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.

Out-of-state teachers may rent the film from Oklahoma State University, Audiovisual Center, Stillwater, Oklahoma 74078-4364, [405] 624-7216.)

b. *The Secrets of Making Good Grades*. Color, 15 minutes, Coronet Films, 1983. Interviews with students show techniques for more efficient studying, deeper learning, effective reviewing, and better grades.

(NOTE: This film is available from Coronet Films, 65 East South Water Street, Chicago, IL 60601, [800]621-2131 or [312] 977-4000.)

2. Computer software: *Speed Reader II*. This reading program is designed to help improve reading skills. Available for IBM, Apple, Commodore, or Macintosh. Manufactured by Davidson & Associates, Inc., 6069 Grove Oak Place, No. 12, Rancho Palos Verdes, California 90274.

(NOTE: *Speed Reader II* can also be ordered from Teachware, P.O. Box 94365, Oklahoma City, Oklahoma 73143. Telephone [405]794-3748.)

B. Order transparency and competency profiles.

(NOTE: Transparencies and competency profiles are available from Curriculum and Instructional Materials Center, Oklahoma State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

C. Provide students with copies of unit.

D. Introduce unit to students.

- Stress the need to use an organized system for learning. Compare organized systems and disorganized systems of learning, and point out the benefits of using consistent study skills to retain more information.
- Emphasize a life-long learning process that will benefit the student financially and personally.
- State that vo-tech students' "jobs" right now are to study and learn. As with any job, there are skills to be mastered and techniques—or "tricks of the trade"—that help them work faster and easier and do a better job.
- Emphasize that whatever their abilities today, these learning skills can improve their performance and can help them to learn more in less time. Remind students that all of them can "learn to learn" just as they are learning the theory and skills in your subject area.
- Show film *The Secrets of Making Good Grades*.

SUGGESTED ACTIVITIES

- Share with students your own experience in developing learning skills when you were in school.
- Have your students take a Nelson Denny test for reading and comprehension skill evaluation.
- Discuss the concepts and benefits of speed reading programs.

E. Provide students with objective sheet.

F. Discuss unit and specific objectives.

(NOTE: The purpose of this unit is to provide students with specific techniques to improve learning and studying. These methods have been tested and proven with thousands of students.)

G. Discuss information and assignment shets

1. Use Information Sheet, Section I, to discuss terms associated with learning.
    - Stress the difference between *learning* and *remembering*.
    - Provide an example of key ideas from material you have covered previously.
    - Ask students to provide examples of associations they have used to help them remember.
2. Use Information Sheet, Section II, to discuss techniques for effective classroom learning.
    - Show film *Studying—A Way to Learn*.
    - Discuss characteristics of a "good" student and a "poor" one.
    - Describe how your former successful and unsuccessful students have approached classroom learning.
    - Construct a bulletin board showing various methods used in classroom learning and review the methods until students show they have mastered them.
    - Use Assignment Sheet #1 for students to evaluate their own study habits. Emphasize that this assignment will not be graded. Discuss in class the desirable study habits and why each is important in effective learning.
    - Ask students to list (1) their reasons for taking this particular course at this time in their lives and (2) the benefits they hope for by taking this course. Stress that this exercise is for their use only.

SUGGESTED ACTIVITIES

- Ask students to list their own strengths or weaknesses as students, either in discussion or written exercise. Ask them to look for and list ways they can improve their weaknesses. Stress that this exercise is for their use only.

3. Use Information Sheet, Section III, to present techniques for remembering.

   - Point out that students already use these techniques in their everyday activities to remember phone and social security numbers, names, and facts.

   - Share with students some of the devices you have used to learn and remember.

   - Use Transparency #1 to demonstrate making a diagram. Point out time-based grouping, use of own words, visualization, counting, and acronyms.

   - Use Information from your subject area and have the class work with the techniques individually, in groups, or as a class. They will need board space or paper to draw or graph what they design.

4. Combine the theory of notetaking in Information Sheet, Section IV, with actual practice in taking notes using Supplement #1 and Assignment Sheets #2 and #3.

   - Ask students what problems they have taking notes and discuss ways to solve those problems, using the techniques in Section IV.

   - Demonstrate different organizational patterns, using information from your subject area.

   - Have students complete Assignment Sheets #2 and #3 as you present the lecture provided with Supplement #1. Read through the instructions and the lecture before using the exercise.

   - Give students a self-check "test" on the lecture later in the week to prove that taking notes helps retention.

5. Use Sections V and VI to discuss the types of information found in dictionaries and in different components of books.

   - Point out that words are found in dictionaries in alphabetical order. Question the class to review their own knowledge of how to use alphabetical order to find dictionary entries.

SUGGESTED ACTIVITIES

EXAMPLES: Words are alphabetized by first letters.
Words with the same first letter are alphabetized by second letters.
Words with the same first two letters are alphabetized by third letters.
Two words used together as one entry are alphabetized as if they were spelled as one word.

- Make a transparency of the first names of class members. Have the class alphabetize the class names.

- Gather a variety of dictionaries: old dictionaries, new dictionaries, students' personal copies from home, dictionaries from different publishers, an unabridged dictionary from the resource center. With each student using a different dictionary, have everyone look up the same word. Compare definitions and other information found with the entries. If the class is large, do this exercise in small groups.

- Point out that language grows and changes. Use new and old dictionaries to illustrate differences in meanings; for example, an old edition would probably contain the word *memory* but would not contain "a computer's capacity for storing information" as one of its meanings. With class members using different dictionaries, have everyone look up words that might be in new dictionaries but not in older editions or might have additional meanings not found in older editions. Compare definitions.

EXAMPLES: Compare entries for the following words:

aspartame
beefalo
bionic
button-down
camelot
candy striper
can of worms
fetology
fish-eye
glasphalt
interrobang
macho
megabuck
vegan
yo-yo

- Use the variety of dictionaries to compare types of supplementary sections found in each.

- Have students complete Assignment Sheet #4 to practice using a dictionary.

- Have students complete Assignment Sheet #5 to become familiar with components of two particular books. Suggest that students use two books that they might be using to research a health topic in Assignment Sheet #7.

6. Introduce systematic reading, using Information Sheet, Section VII, and Assignment Sheet #6.

   - Point out to students that a reading system will enable them to learn and remember more and spend less time reading than the way they are reading now without a system.

SUGGESTED ACTIVITIES

- Ask students what "systems" they have learned or invented in other activities to make better use of their time and energy, i.e., morning rituals, washing dishes, etc.

- Have students complete Assignment Sheet #6, using a reading assignment from health-related material. Since the system requires students to talk aloud, you may want to make this a homework assignment.

7. Demonstrate the information given in Sections VIII and IX.

   - Use students' main textbook and cover the information in the objectives using the text to demonstrate each step.

   - Ask students to select a different textbook to use in practicing skills.

   - Evaluate the students' demonstrations of using textbooks effectively.

8. Emphasize the importance of developing good, solid study habits. Use Information Sheet, Section X to present techniques and stimulate discussion.

   - Have students make out a schedule or daily plan and reserve specific times for study. Remind them to allow time for relaxation and exercise.

   - Have students discuss what supplies and materials they need for studying. Write the list on the board so that students can note additional "tools" that they could use.

   - Suggest that they look over their "notes" from the lecture on learning skills.

9. Discuss ways to prepare for examinations, using the Information Sheet, Sections XI-XIV.

   - Stress the importance of being prepared for examinations.

   - Give a very simple test that all students can pass with ease. Discuss the positive feelings that comes with the knowledge of success in studying, learning, and taking tests.

   - Have students complete Supplement #2, the crossword puzzle, to review terms and definitions before taking the unit test.

   - Have students review Assignment Sheet #2 to use the remembering techniques for studying for the unit test.

   - Use parts of the unit test and demonstrate the various types of questions and discuss how grades and points are assigned to each question.

   - Take time before the unit test is given to review material. Ask students to stand, stretch, and breathe deeply before beginning the test.

SUGGESTED ACTIVITIES

10. Discuss the steps for using an organized method of researching materials, given in Information Sheet, Section XV.

    - Discuss reasons to use an organized method of research.

    - Obtain a variety of reference materials and discuss the steps used in researching information.

    - Use Assignment Sheet #7 to evaluate the students' skills in researching materials.

    - Take students to a medical library and ask the librarian to discuss methods of using the available reference materials.

11. Use Information Sheet, Section XVI, to discuss computer applications in allied health careers.

    - Evaluate your students' knowledge of computers before teaching this section. Many of your high school students will be taking computer courses, but some basic computer skills are essential for all of your students. Determine whether your students have basic computer keyboarding skills and whether they know the components of a computer, can load and unload a program, and can back up a disk. If they do not have these basic skills, have them work through *Introduction to Microcompter Applications* by Gene Hilgenberg, copyright Mid-America Vocational Curriculum Consortium, 1984.

      (NOTE: *Introduction to Microcomputer Applications* is available from Mid-America Vocational Curriculum Consortium, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

    - Point out that health care facilities are also businesses and that some of them contract with an outside computer support group for their computer services.

    - Discuss specific types of computer software available.

      EXAMPLES: A company that develops software for nursing homes offers a dietary package that does a calendar and nutritional analysis. In addition, it generates menus for different types of diets and takes into account the client's likes and dislikes, gives substitutions, does a table for height and weight, and prints dietary meal tags that go on the client's meal tray.

      A software package for coding and medical records will assign a DRG code number to the diagnosis when it is keyed in to the computer.

    - Check the computer software catalogs for other examples of software packages available for health occupations.

SUGGESTED ACTIVITIES

- Have students find out what type of software is being used in the facilities where they are doing theie clinical practices.
- Review each of the applications in the information sheet, and give examples of each.
- Invite the computer expert at your school to discuss the broad range of computer uses with your students.

H. Give test.

I. Reteach and retest if necessary.

J. Complete appropriate section of competency profiles.

III. Unit references

A. Colligan, Louise and Doug. *Scholastic's A + Guide to Good Grades*. New York: Scholastic, Inc., 1979.

B. Kesselman-Turkel, Judi and Franklynn Peterson. *Study Smarts: How to Learn More in Less Time*. Chicago: Contemporary Books, Inc., 1981.

C. Morgan, Clifford, and James Deese. *How to Study*. New York: McGraw-Hill Book Company, 1969.

D. Preston, Ralph C., and Morton Botel. *How to Study*. Chicago: SRA, Science Research Associates, Inc., 1974.

E. Rogers, Helen V. and Ann Benson. *Practical Nursing: Volume I*, rev. by Jamee Reid Sloan. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1981.

F. Staton, Thomas F. *How to Study*, 5th ed. Montgomery, AL: How to Study, P.O. Box 6133, Montgomery, AL 36106, 1968.

TECHNIQUES OF LEARNING
UNIT II

SUPPLEMENT #1 — LECTURE ON LEARNING TECHNIQUES

The purpose of Assignment Sheet #3 is to give students an opportunity to take notes in a structured lecture situation.

A lecture on learning techniques is provided in this supplement. It is in outline form with an introduction, main topics, subtopics, supporting material, transitions, internal summaries, and a conclusion. Behavioral cues for you to signal key ideas are also provided. However, you may want to use a lecture from your own subject area.

A. If you present your own lecture, please include the following methods:

   1. Announce the subject clearly as you begin the lecture — "Today we're going to discuss . . ."

   2. State the number of main topics and list them — "There are five reasons for . . . .," "There are six steps in . . . ."

   3. Be alert to your own body language and exaggerate your normal movements and gestures.

   4. Stress the main points and the key ideas by one or more of the following methods:

      - Repetition
      - Vocal stress
      - Slow down or pause before and/or after each major point
      - Use gestures such as pointing, hammering with the hand or fist
      - Change your physical position, i.e., moving to the right or left of your lectern or desk, leaning forward, moving to the board

   5. Signal the end of discussion on one main point and the beginning of the next point with a clear transition — "The second reason . . . .," "After you have finished ______, the next step is to . . . ."

   6. Summarize the main points at the end and allow time for questions.

   7. Give students time to clean up their notes and complete the assignment sheet.

B. If you use the lecture on learning techniques, here are some suggestions to make the lecture more effective and more enjoyable for your students:

   1. Read through the entire lecture before you present it. Your presentation will be more effective if you can talk to your students as you normally do rather than reading the lecture word for word.

SUPPLEMENT #1

2. Use the behavioral signals written in **bold print** in the left margins to stress important points. These are meant to indicate the *appropriate times* for emphasis rather than to dictate specific gestures. You will be more comfortable and look more natural if you do what you usually do, and the suggestions are included only to give you options and new ideas.

3. As you go through the outline, think of examples and anecdotes from your own teaching and learning experience. Jot down a few key words to remind you. Good opportunities to insert your own material are typed in **bold print** and marked with brackets[ ].

4. You may want to ask your students to respond and participate as you go through the lecture. This will not interfere with the learning objectives of the assignment sheet.

5. Deliver the lecture in from 10 to 15 minutes.

C. Discuss Information Sheet, Section V.

D. Write a sample outline that indicates the structure of a lecture.

(NOTE: You can use examples from a previous class lecture in your subject area. If you use your own lecture, be sure that you list main topics and subtopics.)

EXAMPLE:
- I. Develop a positive "can-do" attitude
  - A. You have to want to learn in order to learn
  - B. You have to create an interest in learning
- II. Use techniques to keep yourself motivated
  - A. Relate what you are learning to something important to you
  - B. Become actively involved in learning
  - C. Set small, realistic goals
  - D. Invent ways to encourage yourself
- III. Make study a habit
  - A. Schedule regular times to study
  - B. Have a regular study area
  - C. Review material on a regular schedule

E. Point out that key ideas will occur in main topics and subtopics and that supporting material is there to help students understand those ideas. Remind them to focus on *key ideas* and to keep their notes *readable* and *brief*.

F. Ask for questions.

G. When you are satisfied that students are ready, begin the lecture.

SUPPLEMENT #1

LECTURE

Introduction:

Very few people learn efficiently. Learning is a skill that must be learned just like any other skill. **[Use an example from your own subject area — "The first time you tried to _______, you were probably awkward or clumsy and didn't do very well, but after you practiced, it was easy."]** Learning to learn efficiently isn't hard, and you will get better with practice. Whatever your skill level is right now, using proven learning techniques will help you improve. You will learn easier and faster; you can learn more in less time; and you can improve your grades.

Today we're going to talk about three ways that you can improve your studying and your learning skills.

Main Topic
Lean forward, gesture

I. First is one of the most important factors in learning any skill — *developing a positive "can-do" attitude.*

We hear a lot about having a positive attitude. You know from your own experience that a positive attitude helps you succeed. When you like what you're doing, you have enthusiasm and energy, your excitement spreads to the people around you, and they are impressed with you *because of your positive attitude.*

Transition

Now, how does this apply to learning? To begin with . . .

Subtopic
Look at class
Stress "want" with voice & gesture

A. You have to *want* to learn in order to learn. **(Repeat)**

1. People who are highly motivated learn more — faster and easier. Think about when you were learning to drive, or working at a hobby, learning to put on make-up, or tuning an engine. **[Refer to students who have excelled in some area and ask them about their experience: How did they get started? How did they learn what they wanted to know? Was it easy? Fun?]**

2. A positive attitude grows — the better you feel about what you are doing, the more positive you become. **[Use an appropriate anecdote about yourself or one of your former students.]**

Transition

This brings us to another question about developing a positive attitude. Where does it come from?

Subtopic
Stress with a gesture

B. **(Pause)** *You* have to *create* an interest in learning. **(Pause)**

1. Interest comes as a result of knowledge. The more you accomplish, the more you will want to accomplish.

SUPPLEMENT #1

2. Education helps you live a better and happier life, giving you confidence in your work and the money to have the things you want.

3. There are no excuses for having a negative or uninterested attitude.
   You have to create an interest in learning.

   EXAMPLE: Students say, "I'm dumb. I can't learn. My teacher doesn't like me. I'm no good with numbers." These excuses are just not true. A survey of high school graduates showed that when a student didn't like a certain subject and didn't do well in it, the reason was not because the student was "dumb." In most cases, the problems were caused by *circumstances* such as changing schools and missing background information; or the teacher had in some way embarrassed the student who then developed a "block" against learning that subject.

Transition
Take 1 step to the side
Large gesture

Now, for the second major point: When you understand that a positive "can-do" attitude really *can* help you succeed and that *you* have to develop that attitude yourself, you are ready to go to work. What can you *do* to get a positive attitude?

Main Topic

II. *Use techniques to keep yourself motivated.*
[Use an example from your subject area to point out that when you are working on a project, you use certain tools and procedures and develop your own techniques to build a positive attitude.]

Subtopic
Look at class
Pause, hold up finger

A. One, *relate what you are learning to something that is important to you.*

   Identify the benefits that you want — a home and a family, the respect of other people, having your own business, helping others, the pleasure from working with **[your subject area]**, material goods, travel. **[Share with students what motivated you to become a teacher.]**

Subtopic
Look at class
Hold up 2 fingers

B. Two, *become actively involved in learning.*

   1. The more you learn, the more you want to learn.

   2. Think of *learning* as your "job" and work at it with the same enthusiasm and dedication that you would give to a good job.

SUPPLEMENT #1

3. Seek out ways to encourage yourself. Ask where the information you are learning will fit into your future plan; reward yourself for your achievements; manufacture some *reason* for studying and convince yourself that it's worth doing. **[Provide an example of how you have motivated yourself to do something you weren't really interested in.]**

Subtopic
Look at class
Hold up 3 fingers

C. Three, *set small, realistic goals for yourself.*

1. When our goals are too high, we usually give up after the first setback. If you have trouble studying for an hour, set your goal for 20 minutes of concentrated attention; if you have been getting D's, it's enough to raise your grades to C's or maybe B's. It's unrealistic to expect all A's in one semester.
2. On the other hand, if our goals are too low, we know we have cheated ourselves and don't respect our accomplishments.

Subtopic
Look at class
Hold up 4 fingers

D. If you are having trouble getting interested, a fourth technique is to *invent ways to encourage yourself to learn.*

1. Find an easier book on the same subject or a book about a famous person who succeeded at what you are learning. Find someone who is interested in your subject and can talk with you about it. Your teachers can help you with these resources and they will be impressed that you have shown so much *interest*.
2. Talk with good students in your classes and let their enthusiasm inspire you.
3. Take yourself on field trips. **[Suggest possibilities in your own subject area.]**

Review important ideas
Pause, gesture on "remember".
Point and jab

Remember — to acquire skills for learning quickly, easily, and effectively, you have to develop an active interest in learning; and *only you* can create that interest.

Transition
Walk a few steps

This brings us to our last important point. While building a positive attitude is a self-improvement project that takes more than a few days to complete, there is one learning technique that will start working for you the very first day.

SUPPLEMENT #1

Main Topic
Stop. Look at class

III. *Make studing a habit, not a random activity.*
Compare people who lay out the next day's clothes the night before with people who scramble to find something to wear half an hour before they have to leave. **[Discuss habits that apply to your subject area, i.e., keeping tools in good working order.]**

Make studying a habit. The more you do it, the better you do it. Just as in athletics or playing a game, the more you practice and play, the more successful you become. With practice, any task gets easier, faster, and more enjoyable.

Transition

What can you do to make studying a good habit? The first and most important thing is to . . .

Subtopic
Walk to board, write "schedule times to study"

Return to your position and resume lecture

A. *Schedule regular times to study and stick to your schedule.*

1. Pick a time when you won't be interrupted. Discourage other people from interrupting you during your study periods. Tell phone callers you will call back after your study period.

2. Schedule your study hours for the times when you are fully awake and alert. Studies show that, for most people, studying during daytime hours is most effective: Each hour used for study during the day is worth an hour-and-a-half of study time at night.

Remember this: Schedule regular times to study and stick to your schedule.

Subtopic
Walk to board, write "make a place to study"

Return to your position and resume lecture

B. Second, *have a regular study area.*

1. We come to associate a space with the activities and feelings that happen there — You will become "programmed" for studying in your study area, so that when you get there, your mind is already beginning to go to work.

2. Pick a place where you are comfortable and where you *like* to work: at a certain table in the library, at a desk or kitchen table, in a comfortable chair; some people study better lying on the floor or, like Mark Twain, sitting in bed.

3. Have everything you need close by. **[Ask students to name "tools" — pencils, paper, light, etc.]**

SUPPLEMENT #1

Subtopic
Walk to board, write "review regularly"

C. Third, *review your material on a regular schedule*.

Return to your position and resume lecture

1. Studies in remembering show that we forget 25 percent of what we learn on the day we learn it. After the first day, forgetting continues, but at a much slower rate. To review, especially on that first day, keeps the information in your mind.
2. As Section V in your Information Sheets shows, the best schedule is to review new information 5-15 minutes after you learn it, and again later that day.
3. Schedule yourself to review a week later and **write it on your calendar**.
4. The third review should take place 3-4 weeks later.
5. The last review should be just before the test.

This information is in Section V of your Information Sheet.

Review

We know that studying as a good habit instead of a random activity can help you increase your learning skills.

Go to board

Let's review the techniques. First, you should schedule regular times to study. Second, always study in the same place. And finally, review on a regular schedule.

Pause. Walk back to place

Conclusion

Count off each point

Let's summarize what we've covered before you go to work on your assignment sheets. We discussed how important it is to develop a positive "can-do" attitude and pointed out that you have to *want* to learn in order to learn. We talked about the fact that *you* have to find ways to motivate yourself. Then we went over some techniques you can use to keep yourself motivated to learn. At the end you heard about techniques for making studying a habit.

Now, what questions or comments do you have?

You may work on your assignment sheets.

TECHNIQUES OF LEARNING
UNIT II

SUPPLEMENT #2 — CROSSWORD PUZZLE

Use the clues below to work the puzzle on the next page.

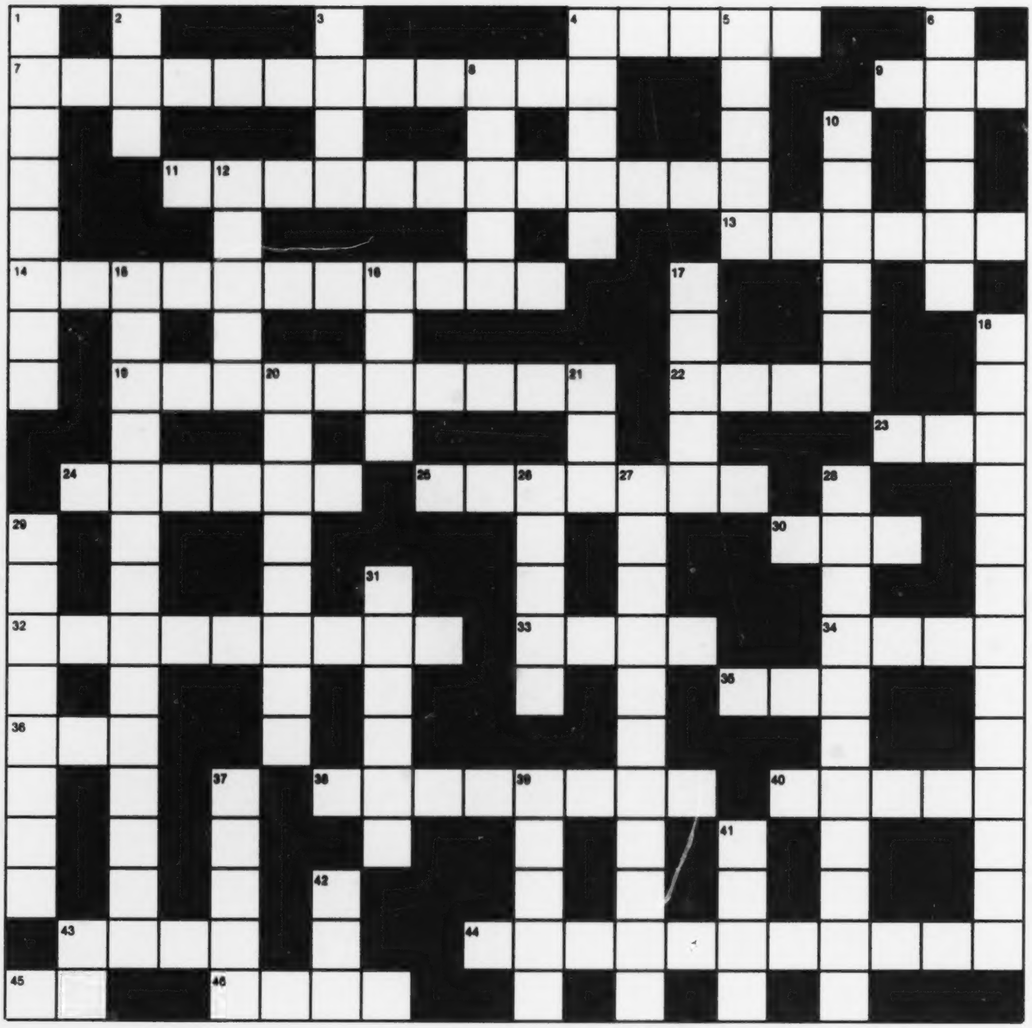
ACROSS

4. Happening
7. Tests
9. Writing instrument
11. Type of test questions that asks student to distinguish between correct and incorrect information (3 wds)
13. Method
14. Putting facts and ideas into long-term storage in the memory and being able to recall them on demand
19. Careful appraisal
22. Adolescent
23. Not hers
24. Style
25. Source of books
30. Eyelid infection
32. Method
33. Text
34. Where you can buy ready-to-eat food
35. Crafty
36. Color
38. Main points (2 wds)
40. Custom
43. Examination
44. Data
45. Spanish *yes*
46. Leave

DOWN

1. Dig for facts
2. Utter
3. Created
4. Type of test question that asks for recall of information and writing a short, concise statement, paragraph, or page
5. What you jot down to remember
6. One of the steps in a reading system
8. The ____________ days of yore
10. Deliberately hear
12. Dance
15. Remembering technique (2 wds)
16. Peruse
17. Study helper
18. Formation of metal images
20. Gaining knowledge, understanding, or skill by study, instruction, or experience
21. Neither, ____________
26. Buy a favor
27. Connecting new information to something you already know
28. Customary ways of preparing for a test
29. Type of test question that asks student to indicate which item on one list is related to which item on another list
31. Overview
37. Commit to paper
39. Liquid refreshment
41. Disabled
42. To glide over snow
43. Note in the musical scale

SUPPLEMENT #2



SUPPLEMENT #2

1 R		2 S				3 M					4 E	V	E	5 N	T			6 R	
7 E	X	A	M	I	N	A	T	I	8 O	N	S			O			9 P	E	N
S		Y				D			L		S			T		10 L		V	
E			11 T	12 R	U	E	A	N	D	F	A	L	S	E		I		I	
A				U					E		Y			13 S	Y	S	T	E	M
14 R	E	15 M	E	M	B	E	16 R	I	N	G			17 T			T		W	
C		N		B			E						U			E			18 V
H		19 E	V	A	20 L	U	A	T	I	O	21 N		22 T	E	E	N			I
		M			E		D				O		O				23 H	I	S
	24 F	O	R	M	A	T		25 L	I	26 B	R	27 A	R	Y		28 S			U
29 M		N			R					R		S			30 S	T	Y		A
A		I			N		31 S			I		S				U			L
32 T	E	C	H	N	I	Q	U	E		33 B	O	O	K			34 D	E	L	I
C		D			N		R			E		C		35 S	L	Y			Z
36 H	U	E			G		V					I				H			A
I		V		37 W		38 K	E	Y	I	39 D	E	A	S		40 H	A	B	I	T
N		I		R			Y			R		T		41 L		B			I
G		C		I		42 S				I		I		A		I			O
	43 T	E	S	T		K			44 I	N	F	O	R	M	A	T	I	O	N
45 S	I			46 E	X	I	T			K		N		E		S			

A Diagram of Key Ideas

Overall

100%

1. Keep a good attitude
2. Be on time
3. Go to all classes

Before Class

1. Read assignment
2. Preview
3. Come prepared to work

During Class

1. Listen
2. Ask questions
3. Sit up front
4. Take good notes

(First letters spell LAST)

After Class

1. Review info
2. Get phone number for Frank or Liz

12 ITEMS

TECHNIQUES OF LEARNING
UNIT II

ANSWERS TO ASSIGNMENT SHEETS

(Assignment Sheet #1 should not be evaluated by the instructor)

Assignment Sheet #2 — Evaluated to the satisfaction of the instructor

Assignment Sheet #3

PART I — Evaluated to the satisfaction of the instructor

A. Check to see that notes are short and focus on major ideas. Credit the use of key words; deduct for full sentences.

B. Notes should have at least these points, although the organization may differ:

(NOTE: If you use your own lecture, be sure you have a list of main topics and subtopics.)

I. Develop a positive "can-do" attitude
    A. You have to want to learn in order to learn
    B. You have to create an interest in learning
II. Use techniques to keep yourself motivated
    A. Relate what you are learning to something important to you
    B. Become actively involved in learning
    C. Set small, realistic goals
    D. Invent ways to encourage yourself
III. Make study a habit
    A. Schedule regular times to study
    B. Have a regular study area
    C. Review material on a regular schedule

(NOTE: Section III was on the board and must be included.)

PART II — Evaluated to the satisfaction of the instructor

A. Check to see that student has organized notes and has written in the right-hand column.

B. Suggested scoring:

12 key ideas	4 points each	48
Notes are brief	8 points	8
Used key words	8 points	8
Readable notes	8 points	8
Organized notes	8 points	8
Related ideas	20 points	20
Total		100

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #4

A. 1. Care and treatment of the human foot
   2. Presence of excess calcium in the blood
B. 1. 6
   2. 6
C. 1. Data
   2. Fetuses
D. 1. Volume, tome
   2. Cure
E. 1. Ignore
   2. Hypoglycemia

Assignment Sheet #5 — Evaluated to the satisfaction of the instructor

Assignment Sheet #6 — Evaluated to the satisfaction of the instructor

Assignment Sheet #7 — Evaluated to the satisfaction of the instructor

TECHNIQUES OF LEARNING
UNIT II

TEST

NAME ________________________________ SCORE ______________

1. Match terms associated with learning skills to their correct definitions. Write the correct numbers in the blanks.

   _____a. To examine in a general way; to get an overview

   _____b. A memory aid

   _____c. Careful appraisal to determine significance or worth

   _____d. Method or procedure used to develop a skill

   _____e. Gaining knowledge, understanding, or skill by study, instruction, or experience

   _____f. Main points or important information taken from reading or lecture

   _____g. Putting facts and ideas into long-term storage in the memory and being able to recall them on demand

   1. Evaluation
   2. Remembering
   3. Key ideas
   4. Technique
   5. Mnemonic device
   6. Learning
   7. Survey

2. State eight techniques for effective classroom learning.

   a. ____

   b. ____

   c. ____

   d. ____

   e. ____

   f. ____

   g. ____

   h. ____

TEST

3. Match techniques for remembering to their correct descriptions. Write the correct numbers in the blanks.

_____a. Make a mental picture

_____b. Make an image with sound

_____c. Take parts of the material, such as key words or the first letters of the items in a list, and arrange them into your own pattern or mnemonic device

_____d. Connect new information to something you already know

_____e. Learn the number of items involved

1. Sound out
2. Visualize
3. Count
4. Associate
5. Shorten

4. State seven techniques for taking notes in class.

a. ____

b. ____

c. ____

d. ____

e. ____

f. ____

g. ____

5. Select from the following list types of information found in dictionaries. Write an "X" in the blank before each correct answer.

_____a. Origins of words

_____b. Plurals

_____c. Synonyms

_____d. Pronunciations

_____e. Definitions

_____f. Syllables

_____g. Antonyms

_____h. Famous speeches of Presidents

_____i. Parts of speech

_____j. Spellings and capitalizations

_____k. All available information about the entries

TEST

6. Match components of a book to their correct definitions. Write the correct numbers in the blanks.

______a. Definitions of terms used in the book

______b. Statement about the book, written by someone other than the author

______c. List of specific topics used in the text and their page numbers

______d. Page that contains the year of publication and the name of the person or company that owns rights to the book

______e. Body of the book

______f. List of general topics and their page numbers, listed by sections, chapters, or subheadings

______g. Page that contains the name of the book, the author, and the publisher

______h. List of other works used in writing the book

______i. Statement by the author about the book

______j. Supplementary material that comes after the main part of a book

1. Preface
2. Appendix
3. Foreword
4. Copyright page
5. Index
6. Glossary
7. Table of contents
8. Text
9. Title page
10. Bibliography

7. List four steps for using a reading system.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

8. State three steps in surveying a textbook.

a. ______________________________

b. ______________________________

c. ______________________________

TEST

9. Select from the following list guidelines for reading a textbook. Write an "X" in the blank before each correct answer.

_____a. Look for ways to apply what you are reading

_____b. Ask instructor for help if material is difficult for you to read

_____c. Scan the material for information that interests you

_____d. Read for main ideas and important details

_____e. Underline each sentence with ink as you read

_____f. Concentrate on the subject matter

_____g. Survey the textbook

_____h. Read with an open but critical mind

_____i. Look for ways to associate what you are reading with what you already know

_____j. Coordinate what you read with what you learn in the classroom; develop a system of taking lecture notes that can be used with notes from texts

_____k. Read everything, including charts, tables, footnotes, and graphs

_____l. Read only the important information within the paragraphs

_____m. Read and remember only the information you think the teacher will use on the test

10. Select from the following list techniques for developing successful study habits. Write an "X" in the blank before each correct answer.

_____a. Study for short periods and take breaks

_____b. Focus your attention on how quickly you can learn the material

_____c. Study with the TV or radio on to help focus your concentration

_____d. Study until you are tired enough to sleep well

_____e. Schedule your study time for four solid hours a night

_____f. Schedule a regular, uninterrupted time for studying

_____g. Use whatever learning techniques are easiest

_____h. Focus your attention on your work

TEST

______i. Read all assignments aloud

______j. Have on hand all the tools you need to work effectively

______k. Work in a quiet, well-lit, well-ventilated area

______l. Study through your lunch break so you will be alert and prepared for your afternoon classes

______m. Get or make a course outline and always look for the overall view of the material

______n. Read and re-read all material several times

______o. Stop studying when you get tired or begin making mistakes

11. Select from the following list purposes of examinations. Write an "X" in the blank before each correct answer.

______a. Measure performance

______b. Punish students

______c. Evaluate effectiveness of teaching

______d. Assess knowledge or progress

______e. Reinforce learning

______f. Document grades

12. Match types of examination questions to their correct definitions. Write the correct letters in the blanks. Definitions continue on the next page.

______a. Asks for one best response from a list of three or more responses

______b. Uses a checklist, observation by an instructor, or observation by a skilled professional to show student's progress in skill areas

______c. Requires recall of information and writing a short, concise statement, paragraph, or page

______d. Requires student to distinguish between correct and incorrect information

______e. Requires recall of information (usually short-answer type) after being given partial information

1. Essay
2. Clinical performance
3. Matching
4. True and false
5. Multiple choice
6. Completion
7. Arrange in order
8. Case study

TEST

______f. Asks student to indicate which item on one list is related to which item on another list

______g. Asks student to evaluate a statement or situation and then relate it to information learned

______h. Asks student to rank statements or steps according to importance or sequence

13. State three ways to prepare for an examination.

    a. ______________________________

    b. ______________________________

    c. ______________________________

14. Select from the following list points to remember when taking an exam. Write an "X" in the blank before each correct answer.

    ______a. Assign each question an appropriate percentage of total time

    ______b. Look for the difficult questions first and spend time answering these before answering the more difficult questions

    ______c. Read question thoroughly before writing any answer

    ______d. If answer sheets are being used, check carefully that the number of the question matches the number of the answer

    ______e. Follow directions carefully

    ______f. Note number of questions, value of questions, and time allowed

    ______g. Answer *only* those questions you are definitely sure you can answer correctly

    ______h. Check to see that *all* questions have been answered

    ______i. Begin with questions in the back of the test and work forward

15. Arrange in order steps in researching materials. Write a "1" in the blank before the first step, a "2" in the blank before the second step, and so on.

    ______a. Use a library source that gives you information on where to find the topics you have listed

    ______b. Summarize the information in a more formal way, depending on the use of the material

    ______c. Write down all topics that may be covered in the area that you are researching

    ______d. Read each article and write down in outline form the information most pertinent to the topic

TEST

16. List three computer applications for allied health careers.

    a. ____________________

    b. ____________________

    c. ____________________

(NOTE: Test items 17-21 list assignment sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

17. Use techniques for remembering.

18. Take notes on a classroom lecture.

19. Use a dictionary.

20. Complete textbook reading assignment, using a reading system.

21. Use library skills to research a health topic.

TECHNIQUES OF LEARNING
UNIT II

ANSWERS TO TEST

1. a. 7
   b. 5
   c. 1
   d. 4
   e. 6
   f. 3
   g. 2

2. Answer may include any eight of the following

   a. Develop a positive, "can-do" attitude
   b. Attend all classes
   c. Be on time
   d. Sit where you can see and hear and be seen and heard
   e. Read and complete assignments
   f. Preview the day's assignment before class
   g. Come to class prepared to discuss and ask questions
   h. Take careful, readable notes
   i. Listen with your full attention
   j. Ask questions when you do not understand
   k. Review information as soon as possible after class
   l. Get to know some other serious students

3. a. 2
   b. 1
   c. 5
   d. 4
   e. 3

4. Answer may include any seven of the following

   a. Be ready with your paper and pen before class starts
   b. Use looseleaf paper and write on only one side
   c. Write down key ideas only
   d. Listen and watch for behavior that "signals" key ideas
   e. Pay close attention to opening and closing remarks
   f. Write down any idea the teacher repeats
   g. Copy diagrams, charts, and graphs from the board
   h. Develop a shorthand form of writing that works for you
   i. Type or copy your class notes as soon after class as possible
   j. Organize your notes in a pattern that makes sense to you

5. a, b, c, d, e, f, g, i, j

ANSWERS TO TEST

6. a. 6
   b. 3
   c. 5
   d. 4
   e. 8
   f. 7
   g. 9
   h. 10
   i. 1
   j. 2

7. Answer should include any four of the following

   a. Survey the whole chapter or unit
   b. Read quickly until you are full of information, then stop
   c. Write down the key ideas immediately
   d. Say the key ideas or key words out loud
   e. Record it in your mind
   f. Review later, on a regular schedule
   g. Discuss with others

8. Answer should include any three of the following

   a. Begin survey by looking through book from front to back
   b. Read the preface to see what the author wanted to accomplish with the book
   c. Look through the table of contents to see what you will be studying
   d. Look at the pictures
   e. Notice the type of format the book uses
   f. Survey one chapter to see how the author organizes the material

9. a, b, d, f, g, h, i, j, k

10. a, f, h, j, k, m, o

11. a, c, d, e

12. a. 5
    b. 2
    c. 1
    d. 4
    e. 6
    f. 3
    g. 8
    h. 7

13. Answer should include any three of the following

    a. Have a positive attitude
    b. Follow a well-organized plan of review
    c. Write legible, well-organized notes
    d. Memorize needed facts, formulas, principles
    e. Get a good night's sleep the night before the examination
    f. Try to relax and enjoy learning

ANSWERS TO TEST

14. a, c, d, e, f, h

15. a. 2
    b. 4
    c. 1
    d. 3

16. Answers should include any three of the following

    a. Medical records
    b. Diagnosis
    c. Anesthesia records
    d. Reminder generations
    e. Appointments
    f. Charges
    g. Billing
    h. Inventory
    i. Payroll
    j. Accounts

17. Evaluated to the satisfaction of the instructor

18. Evaluated to the satisfaction of the instructor

19. Evaluated to the satisfaction of the instructor

20. Evaluated to the satisfaction of the instructor

21. Evaluated to the satisfaction of the instructor

PERSONAL AND VOCATIONAL RELATIONSHIPS
UNIT III

SUGGESTED ACTIVITIES

I. Unit contents

  A. Objective sheet

  B. Suggested activities

  C. Supplements

    1. Supplement #1 — Crossword Puzzle

    2. Supplement #2 — A Lesson in Objectivity

    3. Supplement #3 — Braille Alphabet and Numbers

    4. Supplement #4 — Manual Alphabet and Numbers

  D. Transparency masters

    1. TM #1 — Illiteracy

    2. TM #2 — Communicating

    3. TM #3 — Communicating (Continued)

  E. Information sheet

  F. Assignment sheets

    1. Assignment Sheet #1 — Evaluate Nonverbal Communication

    2. Assignment Sheet #2 — Practice Communication Skills

    3. Assignment Sheet #3 — Pronounce Words Distinctly

    4. Assignment Sheet #4 — Analyze Voice Qualities

  G. Answers to assignment sheets

  H. Test

  I. Answers to test

II. Instructor's guide

  A. Review unit and plan presentation.

  B. Order or obtain materials to supplement unit.

SUGGESTED ACTIVITIES

1. Films

   (NOTE: The following films are available on a free-loan basis to Oklahoma instructors. Oklahoma teachers may order from the State Department of Vocational and Technical Education, CIMC Film Library, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364. Out-of-state teachers must order from the addresses listed with the films.)

   a. *Person to Person: Making Communication Work for You*, 11 minutes, 1972, available from Sandler Institutional Films, 1272 S. Bronson Avenue, Los Angeles, California 90019.

      (NOTE: Narrated by Rod Sterling, this film explores facial expression, body language, eye contact, and vocal enthusiasm of communication.)

   b. *Telephone Manners*, 10 minutes, 1974, available from National Educational Media, 21601 Devonshire Street, Chatsworth, California 91311.

      (NOTE: Dramatically and unforgettably teaching phone courtesy with an impact that motivates, this film has practical tips anyone can master.)

2. Transparencies and competency profiles

   (NOTE: Transparencies and competency profiles for this book are available from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

C. Introduce unit.

- Discuss communication skills, pointing out how important communication is.
- Have the students think about and discuss how it would be not to be able to hear or speak.
- Differentiate between communication and idle chitchat.
- Mention the large population of functional illiterates: sixty million adult Americans, one out of three adult Americans. (See *Illiterate America* by Jonathan Kozol, Anchor Press/Doubleday & Company, Inc., 1985.)
- Point out the problems that illiterates would encounter, such as not being able to read a menu, or read a bedtime story to the children, or read a letter sent home from school, or read the directions on prescription medicine, or read street signs, or read warnings printed on household cleaners, or read consent forms for surgery; or not being able to fill out job applications.

SUGGESTED ACTIVITIES

- Show Transparency #1, Illiteracy.
- If you have a large enough group, play the whisper game. Whisper some sentence to a student, and have each one pass the sentence along and have the last student repeat it aloud. There will invariably be a total distortion of the original sentence. You can also relate this to gossip.
- The majority of jobs in our society right now deals with communications and information. Point out the possibilities for communication we have now, from simple conversation to vast computer networks.
- A major factor in communication breakdown is personality conflict. Stress the fact that we cannot work only with people we like, and that students will have to learn how to communicate with people with whom they have nothing in common. Ask the students what they think they can do to develop a working relationship with people they may not get along with well on a personal basis. Discuss the difference between a working relationship and a personal relationship.
- Point out problems in communication by describing the cartoon where two men are leaving a movie theatre that is showing *The Exorcist*. One man says to the other, "What a shock! I thought it was going to be about push-ups, deep-knee-bends, jogging, and stuff like that!"
- Show Transparencies #2 and #3 as an example of poor communication.

D. Provide students with unit.

E. Discuss unit and specific objectives.

F. Discuss information and assignment sheets.

1. Use Information Sheet, Section I, to introduce students to terms and definitions associated with human relations.
    - Point out that biases and prejudice are cultural factors, and point out how they can affect our communication.
    - Explain how our feelings can sometimes cloud our judgment.
    - Have students complete the crossword puzzle to reinforce the terms and definitions.
2. Use Information Sheet, Section II, to discuss ways to improve relationships with others.
    - Show film *Person to Person: Making Communication Work For You.*

SUGGESTED ACTIVITIES

3. Use Information Sheet, Sections III-V, to discuss communication.

    - Stress the purposes of communication and how the factors in Section V can affect communication.
    - Point out that many people may not be very cooperative if they feel that the health care worker is being too familiar, such as by routinely calling an older client by first name. Using good manners makes good sense.
    - Mention that people from a different area of the country or the world may not understand local slang terms.
    - Give examples of good communication.

4. Use Information Sheet, Sections VI-VIII, to discuss verbal versus nonverbal communication.

    - Explain how the actions that go along with the words are forms of communication.
    - Point out that students wanting a favor or special permission may choose the time to make the request, depending on the other person's body language or tone of voice.
    - Playact two different characters speaking similar lines, and have the students analyze the two people. Person 1 could be a sugar-sweet, overly friendly, toucher; person 2 could use the same words but be gruff and impatient.
    - Stress the importance of nonverbal communication in children and ill people.
    - Have students complete Assignment Sheet #1 to evaluate nonverbal communication.

5. Use Information Sheet, Section IX-XVII, to discuss specific factors related to communication and the care of the client.

    - Explain that as a health care worker, you must treat all clients with respect, regardless of age, sex, national origin, or diagnosis.
    - Stress the need for objectivity in the health care field where employees are often in contact with people of diverse races, nationalities, and backgrounds.
    - Use Supplement #2 to generate class discussion on objectivity.

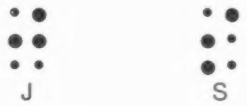
    EXAMPLES: Ask the students if they were surprised that the young man in the prejudice example was a doctor, or that the woman was a judge. Point out that those who were surprised were practicing sex-role and racial stereotyping.

SUGGESTED ACTIVITIES

Discuss how both choices in the pediatrician example involve stereotyping: just as all Jews are not shrewd, mercenary, and overly ambitious—all older, gray-haired men are not necessarily kind or grandfatherly.

Many of the students will read the sex-role example as a riddle and ask themselves, "How can the boy be the surgeon's son?" Tell students that they might be "closet sexists" if they did not realize that the surgeon is a woman and also the boy's mother.

- Ask students to relate instances in which they have fallen into the prejudice trap or instances in which they were the object of someone else's prejudice or discrimination.
- Discuss the importance of allowing clients to express themselves, such as discussing an impending death, even if it makes the student uncomfortable.
- Reinforce the fact that even though medical terminology may sound impressive, using it is wasted time if the client cannot understand what is being said.
- Discuss the chain of command, pointing out that many problems can be magnified by jumping links, and often they can be taken care of easily if taken to the right person.
- Stress ways to communicate with the special needs client. Find out if hearing-impaired clients can lip read, use sign language, or read and write. Mention that all hope of a relationship with a client who has a stutter can be lost if the health care worker laughs.
- Give the students a copy of Supplements #3 and #4. Point out ways in which the students may have to use the manual and braille alphabets.
- Point out that letters and numbers in the braille alphabet are indicated by patterns of raised dots on a six-dot cell arranged in two vertical columns. Draw a six-dot cell on the chalkboard and make enlarged dots to indicate letters.
- EXAMPLES:



- Point out that numbers 1-10 are the same in braille as letters A-J.
- Have students practice making letters in braille, using a pencil to punch holes in paper; the reverse side will be raised dots. Remind students that the side of the paper they punch will be a mirror image of the side that will be read in braille.

SUGGESTED ACTIVITIES

- Divide the class into groups of two. Have students punch their names in braille and then punch another word you have given them or a word of their own choosing. Have each student decipher what the other has communicated.

- Have students practice the manual alphabet; point out that the letters should face the person reading the signs.

- Have each student fingerspell his or her first name.

- Mention that explaining treatments to clients may help them be much more cooperative and less afraid than if they do not understand what is going to happen to them.

- Stress that if the student is to do any documentation, it must be legible and understandable.

- Explain to the students that if they are unsure about responding to a question, they should always check with their supervisor or instructor.

- Have students complete Assignment Sheet #2 to practice responding to awkward situations.

6. Use Information Sheet, Sections XVIII and XIX, to discuss written and telephone communication.

   - Show film *Telephone Manners*.

   - Ask a representative from the local telephone company to be a guest speaker on the topic of telephone etiquette.

   - Point out that a first impression many times will be based on a telephone call, and whoever answers the telephone is representing the company.

   - Give the students a paragraph that has spelling errors, and have the students correct the spelling.

   - Demonstrate the different methods used in your area for correcting errors on written documents.

   - Have the students complete Assignment Sheets #3 and #4.

   - Have the students work in pairs on Assignment Sheet #3 to practice pronouncing words distinctly. Have students suggest other words that are troublesome to pronounce, and add those words to part B.

SUGGESTED ACTIVITIES

- Use Assignment Sheet #4 to help students analyze their own voice qualities. You might have the students fill out the checklist before they tape-record their voices and then fill it out again after hearing their own tapes.

- Ask questions about speech characteristics other than voice quality that affect good communication. Discuss ways to improve poor speech habits.

EXAMPLES: Do you mispronounce words frequently?
Do you use slang often?
Do you have an adequate vocabulary? (If you hear a word you do not know, do you try to find out its meaning?)
Do you speak in long sentences that frequently lose their meaning?
Do you use "uh" and "er-uh" and "you know" excessively?

G. Give test.

H. Critique test and discuss in class.

I. Reteach if necessary.

J. Complete appropriate section of competency profiles.

III. Unit references

A. Barry, Patricia D. and A. James Morgan. *Mental Health and Mental Illness*, 3rd ed. Philadelphia, Pennsylvania: J.B. Lippincott Company, 1985.

B. Rogers, Helen V. and Ann Benson. *Practical Nursing: Volume I*, rev. by Jamee Reid Sloan. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1981.

PERSONAL AND VOCATIONAL RELATIONSHIPS
UNIT III

SUPPLEMENT #1 — CROSSWORD PUZZLE

Use the clues below to review terms associated with personal and vocational relationships. Write the terms in the crossword puzzle on the next page.

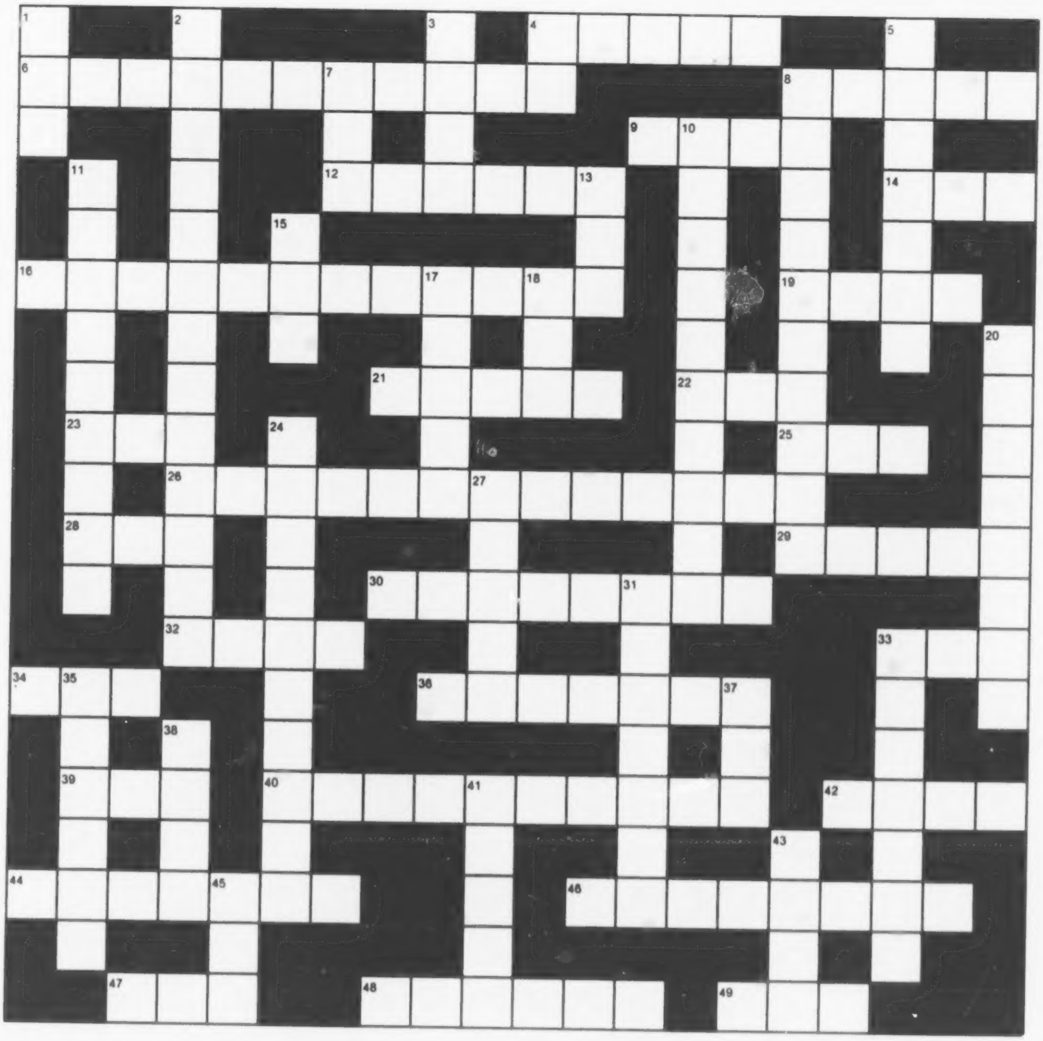
ACROSS

4. Command
6. Act of noting a fact
8. Awake and active
9. Opposite of *more*
12. By hand
14. Sick
16. Association between people
19. Me
21. One of the senses
22. Limb
23. Expire
25. Make a mistake
26. Exchange of information
28. Bill and ________
29. Place confidence in
30. Opinion or decision
32. Food plan
33. Not good
34. Frozen water
36. Closeness; harmony
39. Regret
40. Change in pitch of the voice
42. Spoken
44. Emotion
46. Free from prejudice
47. Noah's boat
48. Oral
49. Writing implement

DOWN

1. Work
2. Client information sheet (2 wds)
3. Language for hearing-impaired people
4. Opposite of *off*
5. Easily read
7. Purpose
8. Analysis
10. Appraisal
11. Bias
13. Rim of mouth
15. Apple ________
17. Faint
18. Abbreviation of *incorporated*
20. Mental view
24. Effect left on mind
27. Large country in Asia
31. Feeling
33. Hindrance
35. Life's work
37. Light sunburn
38. Genuine
41. Mistake
43. Anger
45. Writing fluid

SUPPLEMENT #1



AHC - 161-A

SUPPLEMENT #1

1 J			2 M					3 S		4 O	R	D	E	R			5 L		
6 O	B	S	E	R	V	7 A	T	I	O	N					8 A	L	E	R	T
B			D			I		G				9 L	10 E	S	S		G		
	11 P		I			12 M	A	N	U	A	13 L		V		S		14 I	L	L
	R		C		15 P						I		A		E		B		
16 R	E	L	A	T	I	O	N	17 S	H	18 I	P		L		19 S	E	L	F	
	J		L		E			W		N			U		S		E		20 A
	U		R				21 T	O	U	C	H		22 A	R	M				T
	23 D	I	E		24 I			O					T		25 E	R	R		T
	I		26 C	O	M	M	U	N	27 I	C	A	T	I	O	N				I
	28 C	O	O		P				N				O		29 T	R	U	S	T
	E		R		R		30 J	U	D	G	M	31 E	N	T					U
			32 D	I	E	T			I			M					33 B	A	D
34 I	35 C	E			S			36 R	A	P	P	O	R	37 T			A		E
	A		38 R		S							T		A			R		
	39 R	U	E		40 I	N	F	L	41 E	C	T	I	O	N		42 O	R	A	L
	E		A		O				R			O			43 R		I		
44 F	E	E	L	45 I	N	G			R		46 U	N	B	I	A	S	E	D	
	R			N					O						G		R		
		47 A	R	K			48 V	E	R	B	A	L		49 P	E	N			

PERSONAL AND VOCATIONAL RELATIONSHIPS
UNIT III

SUPPLEMENT #2 — A LESSON IN OBJECTIVITY

Prejudice — A judgment or opinion formed beforehand without thoughtful examination of the pertinent facts, issues, or arguments, especially an irrational or unfavorable opinion; hatred or dislike of a particular group, race, or religion

EXAMPLE: You, a young white woman, have just finished working the 7 to 11 shift and find yourself waiting for the bus on a totally deserted street corner. After a few minutes, a young black man approaches. You begin to feel uneasy and become fearful. Stories about assaults by blacks against whites cross your mind. You grow increasingly tense and decide to move to another bus stop. Just as you are about to leave, a late-model automobile pulls up to the curb. A well-dressed woman inside rolls down the window, leans out, and remarks, "Hello, Dr. Wilson. Would you like a lift?" The stranger answers that he would, and adds, "Perhaps you would like a lift too, Miss. This is Judge Wilson, and I'm sure that she would be glad to give you a lift. It is awfully late in the evening for a young lady to be out alone."

Discrimination — Negative behavior directed towards members of some disliked group; generally arises out of prejudice

EXAMPLE: You are preparing to interview a number of candidates for a well-paying position in your institution. Two of the applicants (Mr. Miller and Mr. Habibby) top your list and appear to be equally well qualified. However, you decide not to interview Mr. Habibby because his name sounds eastern and you dislike and distrust "foreigners."

Stereotype — Cluster of preconceived ideas regarding various groups

EXAMPLE: There are only two pediatricians in the small community to which you have just moved. You must choose one to be your young daughter's physician. Talking with neighbors, you learn that Pediatrician A is an older, gray-haired man who has been practicing in the community for years and is nearing retirement. You are told that he is a bit out of touch with current technology and medical developments. Pediatrician B is a young Jewish man, newly established in the community and practice. You choose Pediatrician A, reasoning that he will be kind and grandfatherly, while Pediatrician B will undoubtedly be shrewd, mercenary, and overly ambitious.

Sexism — Discriminatory behavior based on sex, usually directed toward women

EXAMPLE: Paying a woman less than a man for the same services performed

SUPPLEMENT #2

Sex-role stereotype — Cluster of preconceived ideas about the supposed characteristics of the two sexes, as well as their roles, position, and value in society

EXAMPLE: A father and son were in an automobile accident. The father was killed instantly, and the son was seriously injured. The boy was rushed to the local hospital, where it was found that he was suffering from a severe head injury. When the neurosurgeon arrived and entered the operating room, a loud gasp was heard. "I cannot operate on this boy," the surgeon said. "He is my son."

Objectivity — Ability to suspend judgment, to be without bias or prejudice

PERSONAL AND VOCATIONAL RELATIONSHIPS
UNIT III

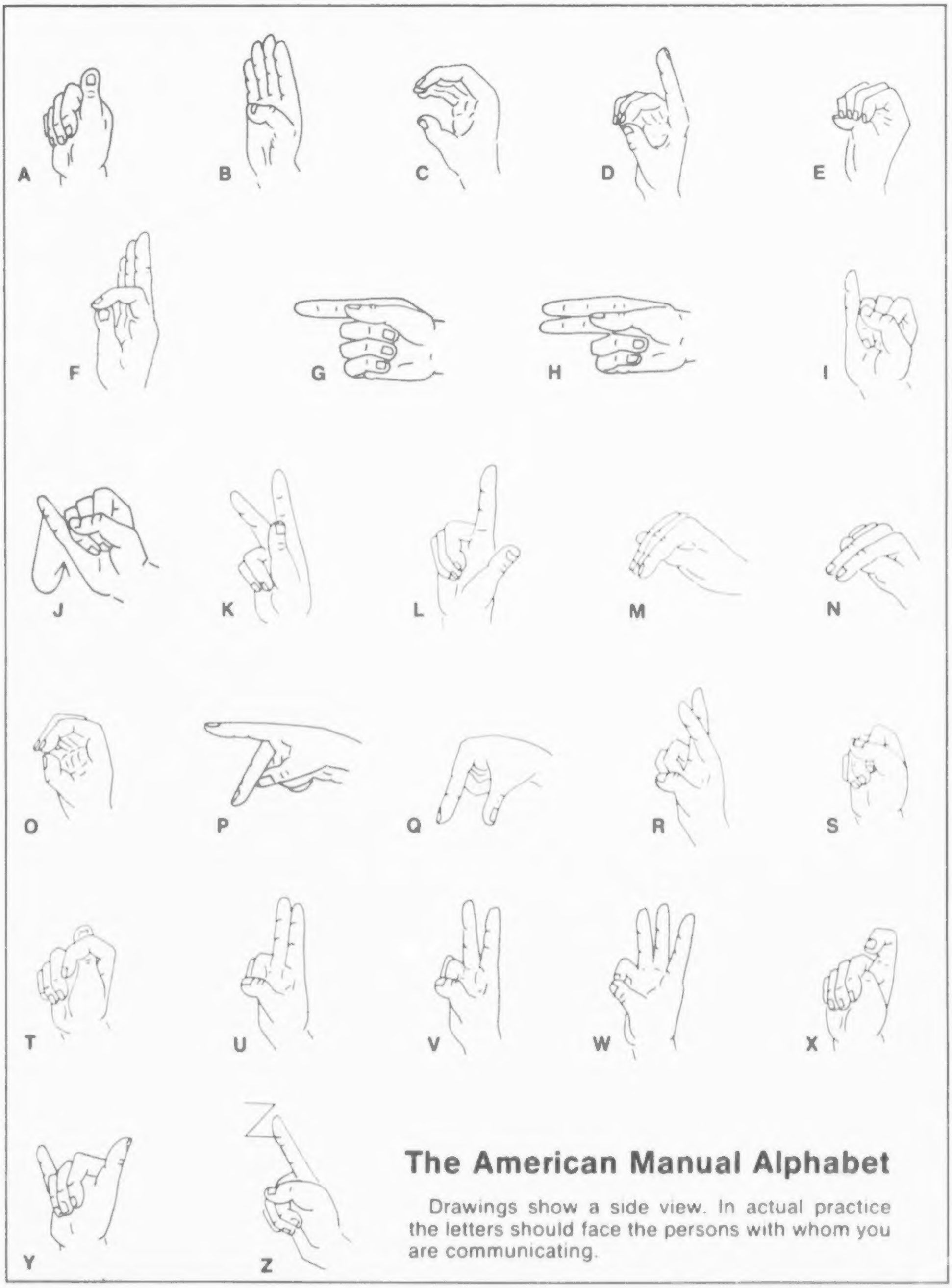
SUPPLEMENT #3 — BRAILLE ALPHABET AND NUMBERS

●○ ○○ ○○	●○ ●○ ○○	●● ○○ ○○	●● ○● ○○	●○ ○● ○○	●● ●○ ○○	●● ●● ○○	●○ ●● ○○	○● ●○ ○○	○● ●● ○○
A	B	C	D	E	F	G	H	I	J
●○ ○○ ●○	●○ ●○ ●○	●● ○○ ●○	●● ○● ●○	●○ ○● ●○	●● ●○ ●○	●● ●● ●○	●○ ●● ●○	○● ●○ ●○	○● ●● ●○
K	L	M	N	O	P	Q	R	S	T
●○ ○○ ●●	●○ ●○ ●●	○● ●● ○●	●● ○○ ●●	●● ○● ●●	●○ ○● ●●				
U	V	W	X	Y	Z				

●○ ○○ ○○	●○ ●○ ○○	●● ○○ ○○	●● ○● ○○	●○ ○● ○○	●● ●○ ○○	●● ●● ○○	●○ ●● ○○	○● ●○ ○○	○● ●● ○○
1	2	3	4	5	6	7	8	9	10

PERSONAL AND VOCATIONAL RELATIONSHIPS
UNIT III

SUPPLEMENT #4 — MANUAL ALPHABET AND NUMBERS

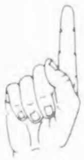
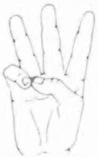
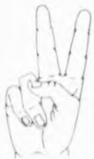
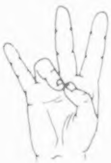
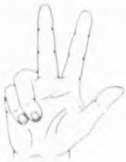
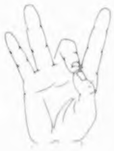
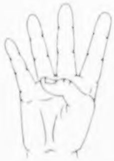
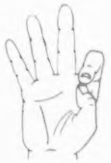
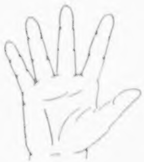
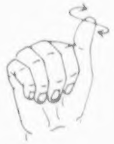


The American Manual Alphabet

Drawings show a side view. In actual practice the letters should face the persons with whom you are communicating.

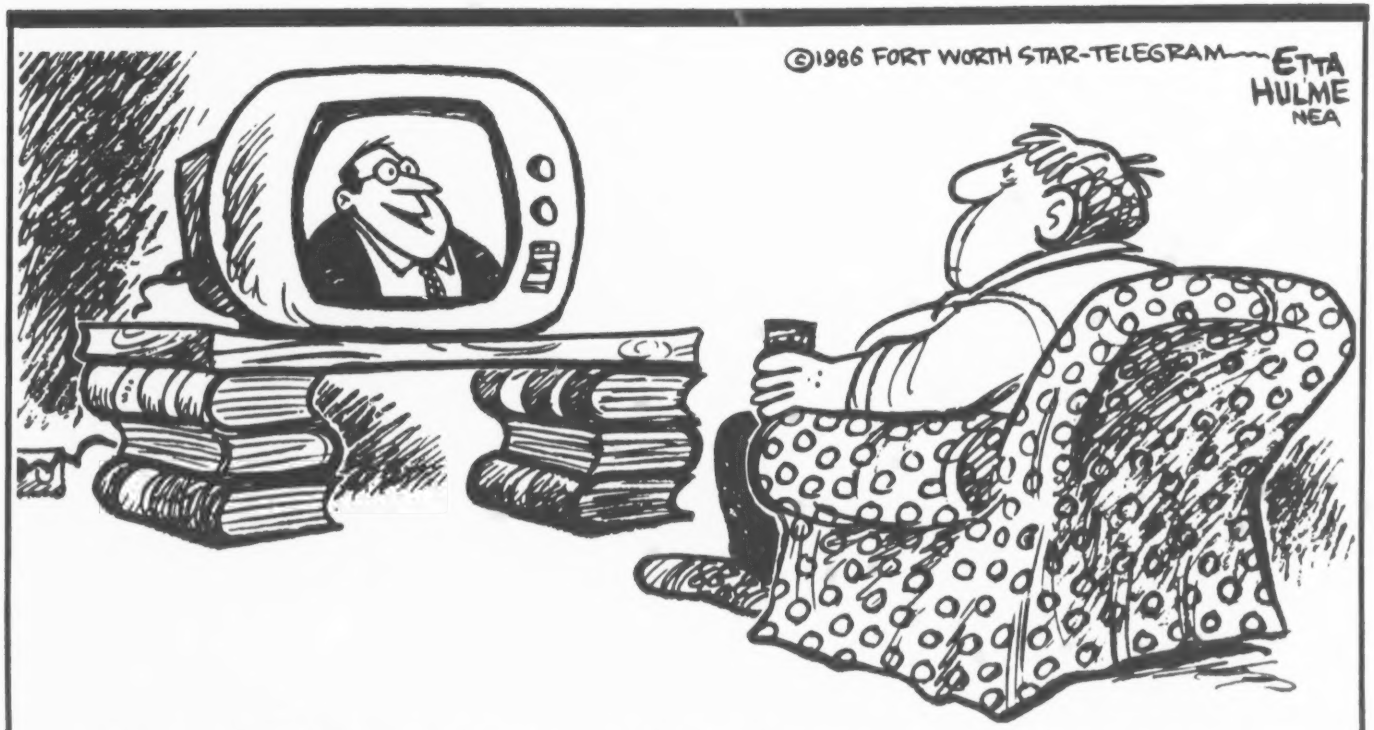
Used with permission of Gospel Publishing House, Springfield, Missouri, from *The JOY of Signing* by Lottie L. Riekehof, 1978.

SUPPLEMENT #4

 **ONE** Hold up the index finger.	 **SIX** Touch the tip of the thumb with the tip of the little finger (other fingers spread).
 **TWO** Hold up the index and middle fingers.	 **SEVEN** Touch the tip of the thumb with the tip of the fourth finger (other fingers spread).
 **THREE** Hold up the index finger, middle finger, and thumb.	 **EIGHT** Touch the tip of the thumb with the tip of the middle finger (other fingers spread).
 **FOUR** Hold up the four fingers (separated).	 **NINE** Touch the tip of the thumb with other fingers spread.
 **FIVE** Hold up all five fingers (separated).	 **TEN** Shake the right "A" hand, thumb pointing up.

Used with permission of Gospel Publishing House, Springfield, Missouri, from *The JOY of Signing* by Lottie L. Riekehof, 1978.

Illiteracy



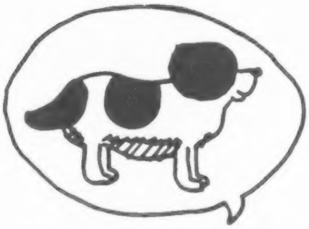
"Stay tuned for a special — 'Adult Illiteracy: A Growing Problem.'"

Used with permission of the Fort Worth *Star-Telegram*.

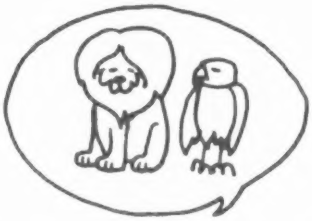
TM #1

AHC - 169-A

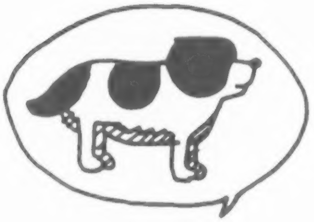
Communicating



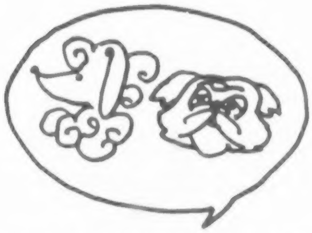
"I HAVE A PET AT HOME"



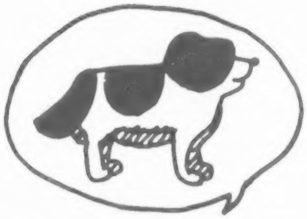
"OH, WHAT KIND OF A PET?"



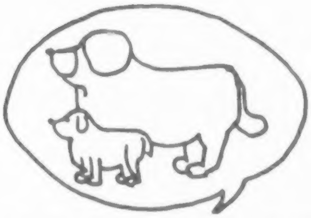
"IT IS A DOG"



"WHAT KIND OF A DOG?"

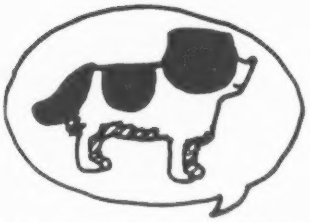


"IT IS A ST. BERNARD"

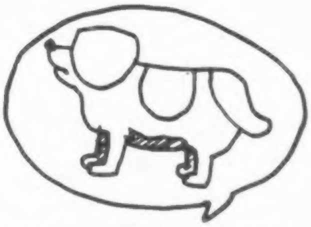


"GROWN UP OR A PUPPY?"

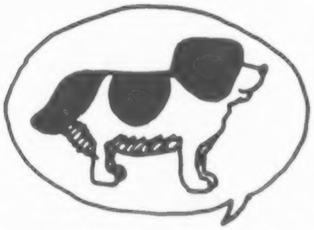
Communicating
(Continued)



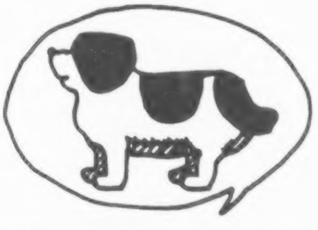
"IT IS FULL-GROWN"



"WHAT COLOR IS IT?"



"IT IS BROWN AND WHITE"



"WHY DIDN'T YOU SAY YOU HAD A FULL-GROWN BROWN AND WHITE ST. BERNARD AS A PET IN THE FIRST PLACE?"

"WHY DOESN'T ANYBODY UNDERSTAND ME ?"

TM #3

PERSONAL AND VOCATIONAL RELATIONSHIPS
UNIT III

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1 (Suggested answers)

A. Surprise, doubt, indifference, closemindedness, defensiveness, disagreement, discomfort, withdrawal from conversation

B. Open, friendly

C. Hostility, lack of acceptance, taking a firm stand with little chance of changing

D. Indifference, boredom

Assignment Sheets #2-#4 — Evaluated to the satisfaction of the instructor

PERSONAL AND VOCATIONAL RELATIONSHIPS
UNIT III

TEST

NAME ______________________________ SCORE ______________

1. Match to their correct definitions terms associated with human relations. Write the correct numbers in the blanks.

_____a. Measure of worth or efficiency

_____b. Any specific feeling that results in mental and physical effects

_____c. Association between people

_____d. Subjective response or reaction, an emotional state or reaction

_____e. Free from prejudice

_____f. Conscious or unconscious mental views developed through cumulative experience

_____g. Judgment or opinion formed at an earlier time or from previous experience; preconception

_____h. Process of forming an opinion or evaluation

_____i. To foresee and deal with in advance

_____j. Determination of worth or significance by careful appraisal or study

_____k. Something conforming to a fixed or general pattern

_____l. To place confidence in someone

_____m. Relationship based on closeness and understanding

1. Emotion
2. Unbiased
3. Value
4. Attitude
5. Judgment
6. Feeling
7. Relationship
8. Prejudice
9. Stereotype
10. Trust
11. Evaluation
12. Rapport
13. Anticipate

2. List five ways to improve relationships with others.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

e. ______________________________

TEST

3. Match to their correct definitions terms associated with communication. Write the correct numbers in the blanks.

_____a. Purposeful gathering and analysis of pertinent information

_____b. Plain, easily read

_____c. Exchange of thoughts, feelings, and information by verbal and nonverbal messages

_____d. Recognize, be aware of

_____e. Look, intonation, or sign that conveys meaning or feeling

_____f. Effect left on the mind due to an experience

_____g. Free from error

_____h. Relating to communication other than with words

_____i. Change in pitch or loudness of the voice

_____j. Noting a fact or occurrence

_____k. Written, legal document of the history and progress of a patient

_____l. Relating to words, including reading, writing, listening, and speaking

_____m. Something that hinders or separates

_____n. Result of an observation; awareness of a symptom

1. Legible
2. Expression
3. Assessment
4. Identify
5. Communication
6. Verbal
7. Accurate
8. Inflection
9. Nonverbal
10. Perception
11. Observation
12. Impression
13. Barrier
14. Medical record

4. List purposes of communication.

a. ______________________________

b. ______________________________

c. ______________________________

TEST

5. Select from the following list ways to improve communication. Write an "X" in the blank before each correct answer.

_____a. Use questions wisely

_____b. Use pet names

_____c. Plan what you are going to say in advance

_____d. Avoid using technical terms unless you know the listener is familiar with them

_____e. Give personal information as examples

_____f. Think before you respond to questions

_____g. Reassure client that although this is the first time you have done this procedure, you are well skilled

_____h. Get the listener's attention

_____i. Speak distinctly

_____j. Avoid eye contact

_____k. Encourage the listener to ask questions and participate

_____l. Talk about one subject at a time

_____m. Always call clients by their first names

6. Match techniques of verbal communication to their descriptions. Write the correct numbers in the blanks.

_____a. Commenting on client's behavior

_____b. Bridging or transitional phrases that encourage people to continue speaking

_____c. Restating part of a person's statement in the form of a question; exploring underlying feelings

1. Reflecting or repeating
2. Sharing observations
3. Open-ended comments or questions

7. State three guidelines for effective listening.

a. ____

b. ____

c. ____

TEST

8. Select from the following list techniques of nonverbal communication. Write an "X" in the blank before each correct answer.

_____a. Touch

_____b. A note written on the client's records

_____c. Appearance

_____d. Gestures

_____e. An oral report

_____f. Discussion

_____g. Body movements

_____h. Debate

_____i. Facial expressions

_____j. Slang

9. Describe barriers to communication.

a. Failure to see person as an individual — ______________________________

____

____

____

b. Failure to recognize hidden meanings of communication — ________________

____

____

c. Failure to listen — ______________________________

____

____

d. Use of clichés and automatic responses — ______________________________

____

____

TEST

e. Interrupting before the client has finished — ______________________________

____

____

f. Failure to clarify comments — ______________________________

____

____

g. Limited vocabulary — ______________________________

____

____

h. Failure to recognize cultural differences — ______________________________

____

____

10. Select from the following list guidelines to establish rapport between the health care worker and other health professionals. Write an "X" in the blank before each correct answer.

______a. Always give an honest opinion

______b. Express yourself clearly and distinctly

______c. Use the proper chain of command when dealing with problems

______d. Discuss information regarding the client's needs with any interested person

______e. Respect the other person

11. Name three guidelines to establish rapport between the health care worker and clients and their families.

a. ____

____

____

TEST

b. ____

____

____

c. ____

____

____

12. Select from the following list basic principles of communication for all health care workers. Write an "X" in the blank before each correct answer.

______a. Tell the client the truth when possible

______b. Always anticipate what the client is going to say

______c. Listen carefully and concentrate on what the client is telling you

______d. If you are in a hurry, excuse yourself

______e. Observe the clients carefully while they are talking to you

______f. Turn direct questions back to the client for further explanation

______g. Change the subject if the topic upsets you

______h. Do not diagnose unless that is your function

______i. Do not whisper in a client's presence

______j. Nod your head to indicate understanding

______k. Establish eye contact with the client

______l. If the instructions are critical, have the client repeat them

13. Describe considerations for communicating with a special needs patient.

a. Hearing — ____

____

____

____

____

TEST

b. Speech or language — ____________________

c. Sight — ____________________

14. List important information to consider when explaining a treatment or procedure to clients and their families.

a. ____________________

b. ____________________

c. ____________________

d. ____________________

e. ____________________

f. ____________________

g. ____________________

15. List three written resources that provide information for effective care of the client.

a. ____________________

b. ____________________

c. ____________________

TEST

16. Name routine information given to clients and their families at the time of treatment.

a. __________

b. __________

c. __________

d. __________

17. Describe ways to handle awkward situations where communication may be difficult.

a. When the client asks personal questions — __________

b. When the client asks questions about other clients — __________

c. When client asks questions about own condition or diagnosis — __________

d. When client refuses treatment — __________

e. When client complains about the care he or she is receiving — __________

TEST

18. State guidelines for communicating by telephone.

    a. ______________________________

    b. ______________________________

    c. ______________________________

    d. ______________________________

    e. ______________________________

19. Select from the following list guidelines for communicating in writing. Write an "X" in the blank before each correct answer.

    ______a. Spell correctly

    ______b. Always use correcting liquid

    ______c. Use a method for correcting errors that is accepted by your particular facility

    ______d. Write legibly

    ______e. Use all abbreviations

    ______f. Use correct medical terminology

    ______g. Use pencil for ease in correcting

PERSONAL AND VOCATIONAL RELATIONSHIPS
UNIT III

ANSWERS TO TEST

1. a. 3
   b. 1
   c. 7
   d. 6
   e. 2
   f. 4
   g. 8
   h. 5
   i. 13
   j. 11
   k. 9
   l. 10
   m. 12

2. Answer should include any five of the following

   a. Think before you speak
   b. Use a pleasant tone of voice
   c. Keep a pleasant smile on your face; try to remain cheerful with a positive outlook
   d. Be very careful of other people's feelings; laugh *with*, not *at* the person
   e. Keep an open mind and be willing to discuss issues, not argue
   f. Keep promises that you make; do not make promises you cannot keep
   g. Regard all others without bias or judgment
   h. Be interested in who others are and what they are doing
   i. Look for opportunities to say something kind or encouraging to those around you
   j. Show sympathy or empathy for others
   k. Be patient and tolerant of those who because of emotional or physical problems are demanding or irritating

3. a. 3
   b. 1
   c. 5
   d. 4
   e. 2
   f. 12
   g. 7
   h. 9
   i. 8
   j. 11
   k. 14
   l. 6
   m. 13
   n. 10

4. a. Obtain knowledge
   b. Give information
   c. Socialize

5. a, c, d, f, h, i, k, l

6. a. 2
   b. 3
   c. 1

7. Answer should include any three of the following

   a. Let the speaker finish and do not interrupt
   b. Be patient
   c. Do not criticize or prejudge

ANSWERS TO TEST

   d. Try to put yourself in the other person's place
   e. Clarify points or statements that you do not understand

8. a, c, d, g, i

9. Descriptions should include the following

   a. Biased or value judgments, including stereotyping and preconceptions of people, prevent one from seeing the other person as he or she really is
   b. Words have different meanings to each individual
   c. The health care worker may be too tired or bored, or client may be too ill or upset to understand what is being said
   d. Statements are sometimes used to avoid interaction between people
   e. Interrupting gives the impression that you are in a hurry or that what the person is saying is not important
   f. Assuming that you know what the client said may lead to misunderstandings
   g. The client may not understand words that are common to you
   h. Each culture has different attitudes, beliefs, and ideas; what is acceptable to one culture may not be to another

10. b, c, e

11. Answers should include any three of the following

   a. Put yourself in the client's place
   b. Use verbal and nonverbal communication
   c. Show empathy for the client and family
   d. Speak to the client and family on their level of understanding
   e. Whenever possible, allow the client and family to take part in decisions regarding the client's care

12. a, c, e, f, h, i, j, k, l

13. Answer should include the following

   a. Hearing
      1) Make sure the health workers know the consistent method of communication
      2) Do not startle clients if they do not see you enter the room
      3) Speak directly to clients so that they may read your lips
      4) Speak distinctly, especially when you are giving instructions or explaining procedures
      5) Make sure a resource person is obtained when the client uses sign language, or make allowances for trained family members to be there when interpretations are needed
      6) If client is wearing a hearing aid, speak in normal tones while facing the client

ANSWERS TO TEST

b. Speech or language
  1) Base your method of communicating on the condition of the speech problem
  2) Be patient with the person who has a speech impediment such as stuttering or lisping
  3) Obtain an interpreter for clients who speak a foreign language
c. Sight
  1) Clients who have limited vision should have large typewritten materials available
  2) Do not startle the client by coming hurriedly into the room, or touching him or her without first speaking
  3) Obtain materials and equipment that your client is comfortable in using for communication

14. a. Description of treatment or procedure
  b. Words the client and family can understand
  c. Purpose or desired outcome of the treatment or procedure
  d. Client's part in carrying out the treatment or procedure
  e. Indication as to how it will feel
  f. Frequency of treatment
  g. Duration of the treatment

15. Answers should include any three of the following

  a. Client's chart or record
  b. Kardex
  c. Care plan
  d. Policy and procedure manual
  e. Computer data bank

16. a. Your name and title
  b. What you are going to be doing for the client
  c. Length of time you will be with client
  d. Specific activities or treatment for which the client is scheduled

17. Answer should include the following

  a. 1) Decide what personal questions you can answer
    2) Remember that the client usually asks these questions because he or she is interested, lonely, uncomfortable, or bored
  b. 1) Never reveal privileged information
    2) Give the client the reason for not answering; do not hurt his or her feelings because the person may be genuinely concerned
  c. 1) Explain that it is not your role to make diagnosis
    2) Tell the doctor what the question or concern is
  d. 1) Ask questions to find out why a client does not want the treatment
    2) Give extra reassurance to encourage the client to take part in the treatment

ANSWERS TO TEST

e.
  1) Find out the true reason for the complaint
  2) Do not become defensive; allow the client to vent feelings

18.
  a. Answer the telephone promptly and courteously
  b. Use a pleasant tone of voice
  c. Speak clearly but not too loudly
  d. Identify yourself by giving your name, location, and title
  e. Note caller's name and make sure you have accurate information

19. a, c, d, f

PROFESSIONAL LEADERSHIP DEVELOPMENT
UNIT IV

SUGGESTED ACTIVITIES

I. Unit contents

- A. Objective sheet
- B. Suggested activities
- C. Supplements
    1. Supplement #1 — HOSA History
    2. Supplement #2 — Crossword Puzzle
    3. Supplement #3 — Instructions for Game "Motion on My Back"
- D. Transparency masters
    1. TM #1 — HOSA Emblem
    2. TM #2 — Steps to Process a Main Motion
- E. Information sheet
- F. Assignment sheets
    1. Assignment Sheet #1 — Give a Prepared One-Minute Talk
    2. Assignment Sheet #2 — Introduce a Speaker
    3. Assignment Sheet #3 — Give a Demonstration
    4. Assignment Sheet #4 — Give an Illustrated Talk
    5. Assignment Sheet #5 — Give a Three-Minute Speech
    6. Assignment Sheet #6 — Present or Receive an Award
    7. Assignment Sheet #7 — Recite the National HOSA Creed
    8. Assignment Sheet #8 — Move a Main Motion and the Previous Question
    9. Assignment Sheet #9 — Evaluate the Effectiveness of Parliamentary Procedures
    10. Assignment Sheet #10 — Evaluate a Chapter Meeting
- G. Answers to assignment sheets
- H. Test

SUGGESTED ACTIVITIES

I. Answers to test

II. Instructor's guide

A. Order materials to supplement unit.

1. Books

a. Jones, O. Garfield. *Parliamentary Procedure at a Glance*. New York: Hawthorn/Dutton, 1971.

b. Roberts, Henry M. *Robert's Rules of Order*, rev. ed. New York: Pyramid, 1980.

c. Health Occupations Students of America. *National HOSA Handbook*, 2nd ed., 1985.

2. Films

(NOTE: The following films are available to Oklahoma teachers on a free-loan basis. Oklahoma teachers may order these films from the Curriculum and Instructional Materials Center, Film Library, Oklahoma State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364. Out-of-state teachers must order from the addresses listed with the films.)

a. *How to Conduct a Meeting*, 18 minutes, 1979. Available from Coronet Films, 65 E.South Water St., Chicago, Illinois 60601.

(NOTE: A disorganized chaotic meeting is straightened out through the use of parliamentary procedure.)

b. *J.J. Gets Ready*, 10 minutes, 1977. Available from Journal Films Incorporated, 930 Pitner Avenue, Evanston, Illinois 60602.

(NOTE: J.J. and the viewers are instructed on the techniques and procedures of preparing to deliver a speech.)

c. *J.J. Gets to His Feet*, 10 minutes, 1977. Available from Journal Films Incorporated, 930 Pitner Avenue, Evanston, Illinois 60602.

(NOTE: J.J. learns the techniques that will help him to relax and deliver an effective presentation and become a successful speaker.)

3. Filmstrips

(NOTE: The following filmstrips are available from the National HOSA Office, 4108 Amon Carter Boulevard, Suite 202, Fort Worth, Texas 76155.)

a. *HOSA Serves the Community*

b. *National HOSA Competitive Events*

SUGGESTED ACTIVITIES

c. *Promoting Your HOSA Chapter Activities*

4. Slide/tape program — *The HOSA Story*, the history of HOSA. Available from HOSA Supply Service, 11722 Parklawn Drive, Rockville, Maryland 28052.

5. Transparencies and competency profiles

   (NOTE: Transparencies and competency profiles are available from Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

B. Introduce unit to students.

- Discuss the need for leadership development, and explain how it will be useful in the students' day-to-day lives. At one time or another, everyone is called upon to make some type of presentation, whether it be to a group or an individual.
- Discuss how everyone involved in a health profession needs to be able to speak to the public.
- Emphasize the need for leadership skills in becoming a productive member of society.
- Have the students think about speakers they have heard, and have them discuss the reasons they thought they were good or bad presenters.
- Give examples of the times you have been asked to give presentations, and how you handled your first speech.
- Select a dynamic speaker the students may be familiar with and point out why that speaker is dynamic.
- Obtain a transcript or tape from a noted speaker, and have the students critique it.

C. Provide students with copies of unit.

D. Discuss unit and specific objectives.

E. Discuss information and assignment sheets.

1. Relate the meaning of the terms in Section I of the Information Sheet to the information to be covered in the unit.
   - Have the students complete the crossword puzzle.
   - Use the *National HOSA Handbook* to supplement the terms and definitions found in the unit.

SUGGESTED ACTIVITIES

2. Discuss components of a good organization, using Information Sheet, Sections II-IV.

   - Ask students to analyze a successful organization they already belong to or know about to determine its strong points. List the strong points on a chalkboard as they are mentioned. Encourage all members of the group to interact so that one individual is not doing all the work. Bring out any additional points from Section II that were not covered.

   - Divide the class into small groups to brainstorm about what produces a good meeting. Have each group share their ideas with the other groups, then ask students to check Section III for suggestions not covered.

   - Have students make individual lists of characteristics of a good chairman. Ask each student to exchange lists with another student and try to add another characteristic of a good chairman. Have each student exchange lists with yet another student to repeat the process. Ask one student to make a composite list on the chalkboard, then ask class to compare their composite list with Section IV.

   - Discuss ways students can develop these characteristics of a good chairman.

3. Provide the opportunity for students to learn the basic steps in making a presentation, using information in Sections V-VII.

   - Use Assignment Sheets #1-#6 to allow students to practice skills in developing and making presentations.

   - Show films *J.J. Gets Ready* and *J.J. Gets to His Feet* to present the correct methods of preparing and making a presentation.

   - Tape-record or videotape students' presentations. Ask class to critique presentation and give constructive evaluations.

   - Explain how irritating gestures such as drumming fingers, playing with hair, tapping a pencil, or jingling change, can detract from a presentation.

4. Motivate students to participate in HOSA by learning information in Sections VIII-XII.

   - Hang HOSA banner in room and pictures of HOSA activities on bulletin board.

   - Show Transparency #1 with appropriate sections colored maroon and navy.

   - Provide time for students to learn the HOSA motto.

SUGGESTED ACTIVITIES

- Use Assignment Sheet #7 to help students learn the National HOSA Creed.
- Ask a student to model the official HOSA uniform; order an official blazer for each student if possible.
- Use Supplement #1 as background information in discussing the HOSA organization.

5. Present information in Sections XIII and XIV related to why leadership skills are important and how becoming a member of a vocational organization is beneficial.

    - Have the HOSA state advisor visit the class to discuss the benefits of belonging to HOSA and to explain the purposes and activities of the association.
    - Discuss the issue of why health professionals need to be involved in civic affairs.
    - Ask the past HOSA chapter president to speak to the class on last year's activities and encourage students to be active in HOSA.
    - Give students the supplement on HOSA history.
    - Show *The HOSA Story*.
    - Show students scrapbooks of pictures and articles related to last year's activities and discuss future events.

6. Apply information in Sections XV-XIX as you organize a local HOSA chapter.

    - Elect officers and hold an installation ceremony.
    - Ask students to set up committees to plan programs and activities for the year.
    - Encourage students' participation in each HOSA leadership training activity listed, stressing the benefits of learning leadership skills.

7. Stress the importance of learning proper parliamentary procedures for usage in a variety of settings, using the Information Sheet, Sections XX-XXVII.

    - Provide copies of *Robert's Rules of Order* or *Parliamentary Procedure at a Glance* for students to use in learning the proper procedures.
    - Show the film *How To Conduct a Meeting*, and discuss the use of parliamentary procedure as it is used to conduct meetings.
    - Provide opportunity for students to practice parliamentary procedures during chapter meetings.

SUGGESTED ACTIVITIES

- Show Transparency #2 when discussing steps to process a main motion.
- Ask students to think of a mnemonic device to help them recall the steps to process a main motion.

  EXAMPLES: **O**rdinarily **A**ll **M**edical **S**tudents **S**urvive **D**espite **P**hysical **A**ctivity

  Opticians **A**re **M**edical **S**ight **S**pecialists **D**iagnosing **P**roblems **A**ccurately

  Ornery **A**nimals **M**ight **S**lurp **S**upper **D**espite **P**arental **A**dvice

- Use Assignment Sheet #8 to practice moving a main motion and the previous question. Assign students roles for the sequences in parts I and II, making sure that each student has a turn playing chairman.
- Play "Motion on my Back," using instructions in Supplement #3.

8. Use Assignment Sheets #9 and #10 for students to evaluate the use of parliamentary procedure.

F. Give test.

G. Critique test and discuss it with the class.

H. Reteach and retest if necessary.

I. Complete appropriate section of student's competency profiles.

III. Unit references

A. Jones, O. Garfield, *Parliamentary Procedure at a Glance*. New York: Hawthorn/Dutton, 1971.

B. *National HOSA Handbook*, 2nd ed. Health Occupations Students of America, 1985.

C. Patton, Bob, et al. *VICA: Learn, Grow, Become*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, Stillwater, Oklahoma, 1984.

D. Rogers, Helen V. and Ann Benson. *Practical Nursing: Volume I,* rev. by Jamee Reid Sloan. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1981.

PROFESSIONAL LEADERSHIP DEVELOPMENT
UNIT IV

SUPPLEMENT #1 — HOSA HISTORY

I. Dates of important HOSA events

  A. November, 1975 — Oklahoma was one of the six original chapter states involved in the organization of a national health occupations education student organization in Cherry Hill, New Jersey.

  B. November, 1976 — American Health Occupations Education Student Organization Constitutional Convention was held in Arlington, Texas; national bylaws were adopted and national officers were elected and installed; colors and the name, Health Occupations Students of America, were adopted.

  C. April, 1978 — First annual convention of HOSA was held in Oklahoma City, Oklahoma to select national uniform, motto, and emblem; to provide leadership training; and to involve students in skills contests

II. Dates of historical importance in Oklahoma Association of HOSA events

  A. August, 1973 — Survey of interested health occupations instructors was taken to decide if a new organization should be formed for students in health occupations programs

  B. May 30-31, 1974 — Steering committee composed of teachers and state staff members was appointed and met for two days to investigate and make recommendations for the new organization; plans were made for the first chapters to be formed in September

  C. Fall, 1974 — Meeting was held to elect officers for the new health occupations student organization; officers were later installed and a name, colors, motto, creed, and emblem were selected

  D. April, 1975 — First state conference was held in Tulsa, Oklahoma, for leadership training and skills contest

  E. Spring, 1976 — Conference held in Tulsa, Oklahoma; included new chapters from practical nursing programs

  F. Fall, 1976 — Conference held in Oklahoma City, Oklahoma; adult and secondary officers were elected and installed

PROFESSIONAL LEADERSHIP DEVELOPMENT
UNIT IV

SUPPLEMENT #2 — CROSSWORD PUZZLE

Puzzled about some of the terms associated with professional leadership development? Review the terms in the information sheet and then test yourself by working the crossword puzzle. Use the clues given below to fill in the puzzle blanks on the next page.

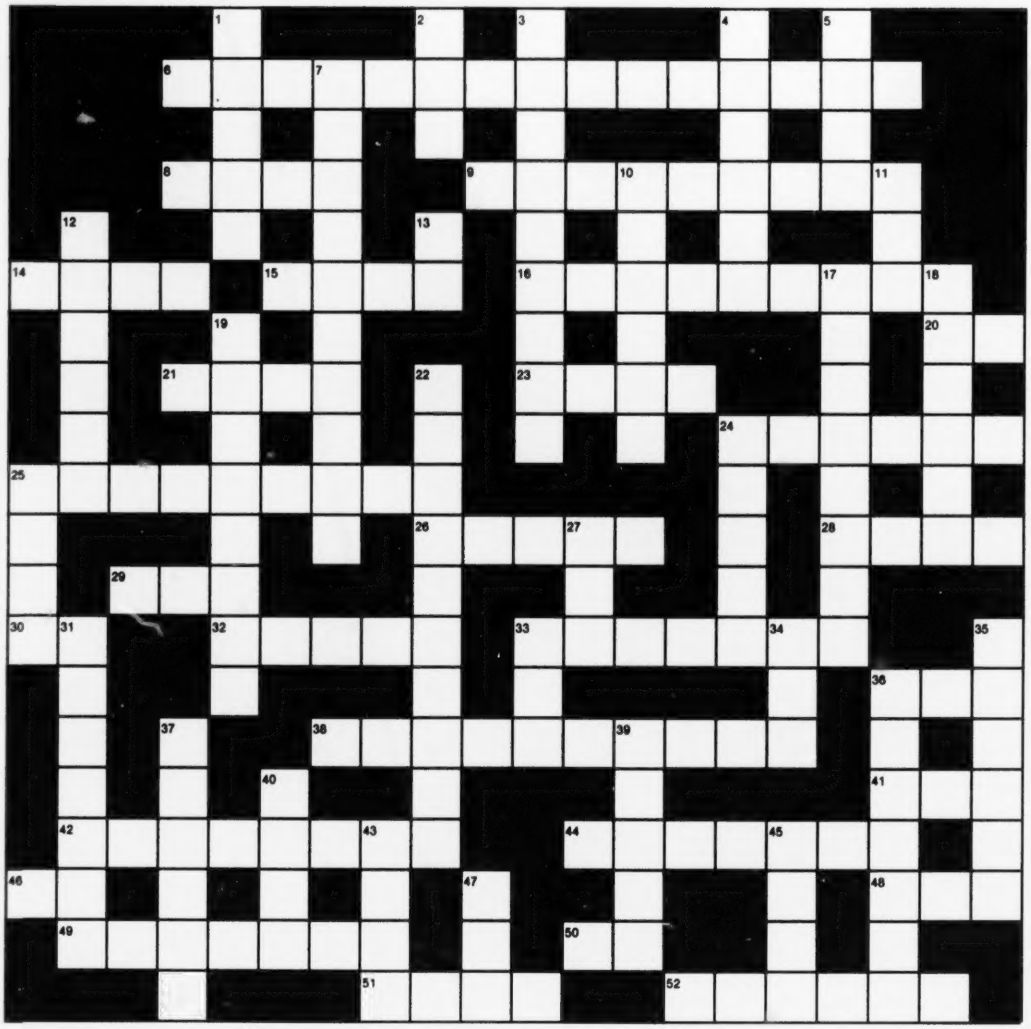
ACROSS CLUES

6. Informs members on correct parliamentary procedures
8. Marketing student organization
9. Person who heads the meetings
14. Applaud
15. Back
16. Officer who handles money
20. Prefix meaning *out of*
21. Not a gain
23. Contest
24. Number of members needed for official business to be transacted
25. Officer who gathers materials for the chapter scrapbook
26. Designated place from which a member speaks
28. Equaled score
29. Ag student organization
30. Morning
32. Flowing water
33. Resource person for student organization
36. Eggs
38. End of an outline
41. Pair
42. Part of the HOSA symbol
44. _______ and surgical care
46. Exist
48. Hotel
49. People who allow a motion to come up for a vote
50. All right
51. Cooperative group
52. Individual in an organization

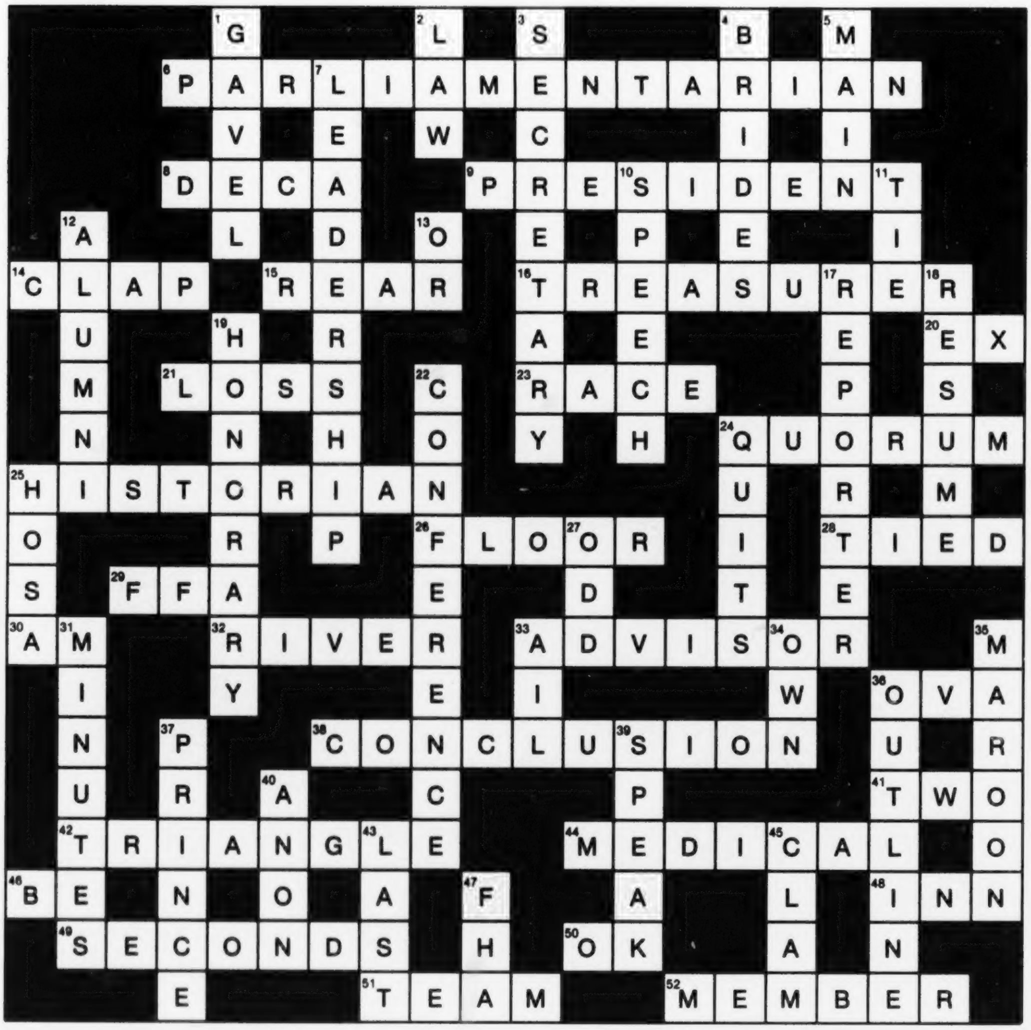
DOWN CLUES

1. What is knocked on the table during a meeting
2. Rule
3. One who keeps the minutes
4. _______ and grooms
5. Motion that introduces business
7. HOSA helps develop _______
10. Presentation
11. Neckwear
12. Former member
13. Either, _______
17. One who keeps the media informed of chapter activities
18. Short account of one's career
19. Type of life membership
22. Meeting
24. Ends
25. Health student organization
27. Peculiar
31. Written account of a meeting
33. Sick
34. Possess
35. One of the HOSA colors
36. Skeleton of information
37. Royal son
39. Utter
40. Soon
43. Final
45. Shellfish
47. Home economics student organization

SUPPLEMENT #2



SUPPLEMENT #2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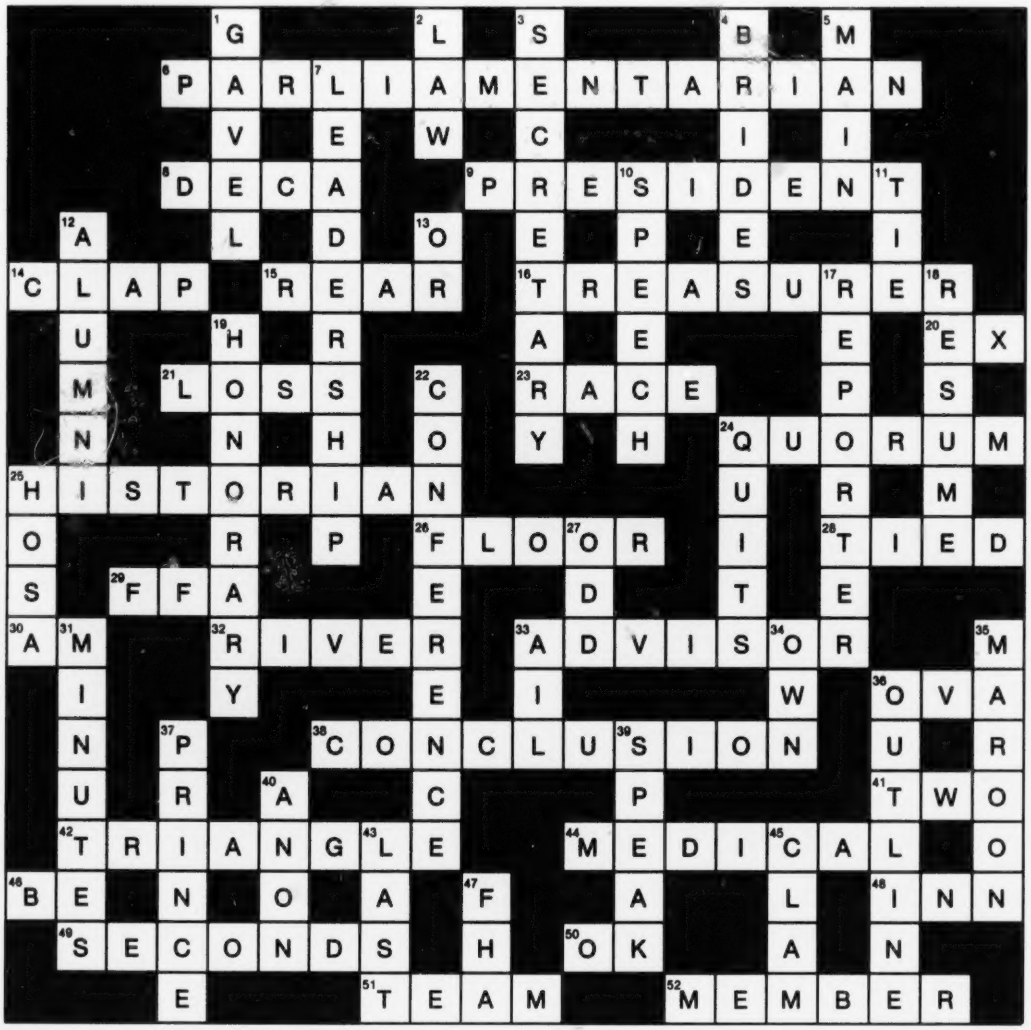
6 P A R 7 L I A M E N T A R I A N
V E W C I I
8 D E C A 9 P R E 10 S I D E N 11 T
12 A L D 13 O E P E I
14 C L A P 15 R E A R 16 T R E A S U 17 R E 18 R
U 19 H R A E E 20 E X
M 21 L O S S 22 C 23 R A C E P S
N N H O Y H 24 Q U O R U M
25 H I S T O R I A N U R M
O R P 26 F L O 27 O R I 28 T I E D
S 29 F F A E D T E
30 A 31 M 32 R I V E R 33 A D V I S 34 O R 35 M
I Y E I W 36 O V A
N 37 P 38 C O N C L U 39 S I O N U R
U R 40 A C P 41 T W O
42 T R I A N G 43 L E 44 M E D I 45 C A L O
46 B E N O A 47 F A L 48 I N N
49 S E C O N D S H 50 O K A N
E 51 T E A M 52 M E M B E R

SUPPLEMENT #2


1 G 2 L 3 S 4 B 5 M
6 P A R 7 L I A M E N T A R I A N
V E W C I I
8 D E C A 9 P R E 10 S I D E N 11 T
12 A L D 13 O E P E I
14 C L A P 15 R E A R 16 T R E A S U 17 R E 18 R
U 19 H R A E E 20 E X
M 21 L O S S 22 C 23 R A C E P S
N N H O Y H 24 Q U O R U M
25 H I S T O R I A N U R M
O R P 26 F L O 27 O R I 28 T I E D
S 29 F F A E D T E
30 A 31 M 32 R I V E R 33 A D V I S 34 O R 35 M
I Y E I W 36 O V A
N 37 P 38 C O N C L U 39 S I O N U R
U R 40 A C P 41 T W O
42 T R I A N G 43 L E 44 M E D I 45 C A L O
46 B E N O A 47 F A L 48 I N N
49 S E C O N D S H 50 O K A N
E 51 T E A M 52 M E M B E R

PROFESSIONAL LEADERSHIP DEVELOPMENT
UNIT IV

SUPPLEMENT #3 — INSTRUCTIONS FOR GAME "MOTION ON MY BACK"

Set up the game "Motion on my Back"

A. Object — Identify a motion when given its characteristics

B. Preparation

1. Write the names of the following subsidiary motions in large letters on sheets of paper, using a separate sheet for each motion: *lay on the table, previous question, refer to a committee, amend, postpone indefinitely.*
2. Make a flashcard for each of the following characteristics of different motions: *second, no second, debatable, not debatable, amendable, not amendable, majority vote, two-thirds vote, no vote required, can be reconsidered, cannot be reconsidered.*
3. Make a transparency or copies of the chart on the next page.

C. Playing instructions

1. Show transparency or distribute copies of chart.
2. Pin a motion sheet on each student's back without letting the student see it.
3. Distribute a flashcard to each player.
4. Designate one player as "It."
5. Have the player designated "It" rise and display the motion on his or her back to the other players.
6. Have the other players hold up the flashcards that describe the characteristics of the motion.
7. "It" tries to guess the name of the motion from the cards shown.
8. Continue game until each player has guessed the name of the motion on his or her back.

D. Variations

1. Give cards with matching characteristics (e.g., *second, no second)* to one player when the number of players is limited.
2. Include privileged and incidental motions for intermediate and more advanced players.

AHC - 233-A

SUPPLEMENT #3

Summary of Motions

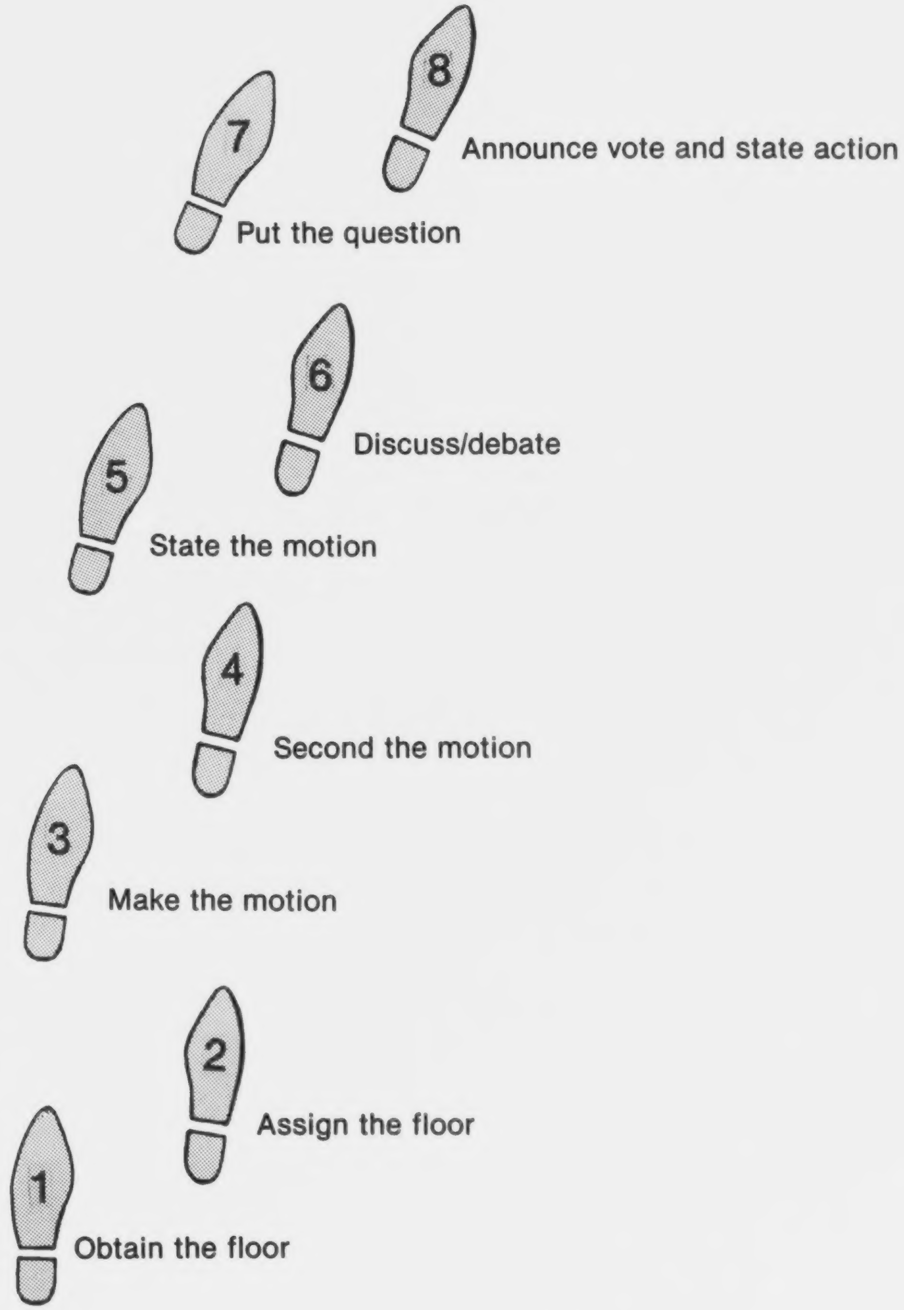
Classification	Kind	Second Required	Debatable	Amendable	Vote Required	Can Be Reconsidered
Main	Main Motion	Yes	Yes	Yes	Majority	Yes
Subsidiary	Lay on the Table	Yes	No	No	Majority	No
	Previous Question	Yes	No	No	2/3	Yes
	Refer to Committee	Yes	Yes	Yes	Majority	Yes
	Amend	Yes	Yes	Yes	Majority	Yes
	Postpone Indefinitely	Yes	Yes	No	Majority	Yes
Privileged	Adjourn	Yes	No	No	Majority	No
	Question of Privilege	No	No	No	None	No
Incidental	Point of Order	No	No	No	None	No
	Appeal	Yes	Yes	No	Majority	Yes
	Suspend the Rules	Yes	No	No	2/3	No
	Division of the Assembly	No	No	No	None	No
	Parliamentary Inquiry	No	No	No	None	No
	Withdraw a Motion	No	No	No	Majority	Yes
Other	Take from the Table	Yes	No	No	Majority	No
	Reconsider	Yes	Yes	No	Majority	No
	Rescind	Yes	Yes	Yes	2/3	No

HOSA Emblem

HEALTH OCCUPATIONS STUDENTS OF AMERICA
HOSA
FOUNDED 1976

Used with permission of Health Occupations Students of America.

Steps to Process a Main Motion



Announce vote and state action

Put the question

Discuss/debate

State the motion

Second the motion

Make the motion

Assign the floor

Obtain the floor

PROFESSIONAL LEADERSHIP DEVELOPMENT
UNIT IV

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheets #1-#7 — Evaluated to the satisfaction of the instructor

Assignment Sheet #8

PART I

A. Evaluated to the satisfaction of the instructor

B. 1. The member must be recognized before presenting a motion; otherwise, the motion is out of order.

  2. The motion is not before the assembly without a second. Pause, then go on to the next item of business.

  3. The chairman would state, "Are you ready for the question?" If the chairman received no further debate, the chairman would proceed to vote on the pending question.

  4. Chairman would state, "Discussion is not in order as there is no motion before the assembly."

  5. Discussion is not in order until the motion is before the assembly.

PART II

A. Evaluated to the satisfaction of the instructor

B. Stops debate on the motion or motions before the chapter and secures a vote immediately.

C. 1. The previous questions fails for a lack of two-thirds vote.

  2. An amendment is not in order on the previous question.

  3. The motion calling for a previous question is not before the assembly because of lack of a second.

Assignment Sheets #9 and #10 — Evaluated to the satisfaction of the instructor

PROFESSIONAL LEADERSHIP DEVELOPMENT
UNIT IV

TEST

NAME ______________________________ SCORE ____________

1. Match terms associated with professional leadership development to their correct definitions. Write the correct numbers in the blanks.

______a. Facial expression or body motion used to emphasize an idea

______b. Person appointed by the state supervisor and approved by the executive council to advise and provide leadership for the state organization

______c. Short account of one's career and qualifications prepared by person applying for a position

______d. Student organization at the national level for students enrolled in health occupations programs

______e. Student chosen to represent the local chapter in balloting on questions of business or election of officers at state or national conferences

______f. Former active member who has remained in good standing with the chapter

______g. Person(s) designated by local school administration to advise and provide leadership for the local HOSA chapter

______h. Person who may be associated with, or who has participated in, the development of health occupations student organizations in Oklahoma as approved by the state organization

______i. Logical organization of ideas that form the framework of any story, essay, or other form of information

______j. Individual who has made contributions to development of HOSA in Oklahoma and whose membership has been approved by the state executive council

______k. Student enrolled in an approved health occupations educational program; must be member of the state organization in order to hold offices on the local, state, and national levels

1. Outline
2. State HOSA advisor
3. Active member
4. Honorary life member
5. Gesture
6. Résumé
7. Local chapter advisor
8. Voting delegate
9. Professional member
10. Alumni member
11. Health Occupations Students of America (HOSA)

TEST

2. Select from the following list essentials of a good organization. Write an "X" in the blank before each correct answer.

_____a. A large budget

_____b. Challenging program of activities

_____c. Active member participation in chapter activities

_____d. Variety of a number of social activities

_____e. Capable officers and leaders

_____f. Support from school officials and community leaders

_____g. Proper recordkeeping

_____h. Responsibility for organizational activities shared by all members

_____i. Well-planned, regularly held meetings

3. Select from the following list guidelines for conducting a good meeting. Write an "X" in the blank before each correct answer.

_____a. Arrange the seating plan so that everyone can see the program

_____b. Have the executive committee plan and practice before the meeting

_____c. Proceed according to the order of business

_____d. Organize plan for clean-up duties

_____e. Skip any lengthy report to save time

_____f. Have an official greeter to make everyone feel welcome and to prevent interruptions of serious portions of the meeting

_____g. Invite a guest speaker to wing it on any topic and for any length of time just so that the meeting will have a program

_____h. Have the secretary, treasurer, and each committee prepare written and oral reports

_____i. Have the advisor indicate when it is time to proceed to the next order of business

_____j. Begin and end on time

TEST

______k. Have all members express appreciation to guests for their attendance

______l. Appoint committees composed only of members who have contributed in the past

______m. Conduct business according to parliamentary procedure

______n. Move the meeting along with "snap" to prevent boredom and wasted time

4. List characteristics of a good chairman.

a. ____

b. ____

c. ____

d. ____

e. ____

5. Arrange in order steps in developing a presentation. Write a "1" in the blank before the first step, a "2" in the blank before the second step, and so on until all steps are numbered.

______a. Arrange material in logical order

______b. Analyze the subject

______c. Record key information only

______d. Choose a topic that is interesting to the audience, making sure that you are knowledgeable of that subject

______e. Research available references

______f. Practice your presentation

______g. Decide type of presentation

6. Match the principle parts of an outline to their correct descriptions. Write the correct numbers in the blanks.

______a. Central theme of presentation; carries main idea

______b. Repeats or summarizes the main point of the presentation

______c. Beginning of a presentation; should attract and motivate audience

1. Conclusion
2. Introduction
3. Body

TEST

7. Select from the following list ways to improve the delivery of a presentation. Write an "X" in the blank before each correct answer.

______a. Speak clearly and in a pleasant tone of voice

______b. Focus eyes on the back of the room

______c. Use several humorous stories throughout your presentation

______d. Add appropriate gestures to make points

______e. Let all important actions, objects, and aids be seen clearly

______f. Keep arms at sides at all times to avoid distracting audience

______g. Be enthusiastic and confident

______h. Be neatly groomed

______i. Make eye contact with your audience

8. Match abbreviations of vocational student organizations to their correct full names. Write the correct numbers in the blanks.

______a. Future Farmers of America

______b. Finance and Business Leadership Association

______c. Dedicated Education Counselors Association

______d. Future Homemakers of America-Home Economics Related Occupations

______e. American Industrial Arts Student Association

______f. Distributive Education Clubs of America

______g. Vocational Industrial Clubs of America

______h. Association of Industrial Alliance Students of America

______i. Health Occupations Students of America

______j. Future Business Leaders of America

1. AIASA
2. DECA
3. FBLA
4. FFA
5. FHA-HERO
6. HOSA
7. VICA

TEST

9. Select the HOSA motto from the following list. Write an "X" in the blank before the correct answer.

_____a. The Molding of Tomorrow's Health is in the Hands of HOSA

_____b. The Hands of HOSA Mold the Health of Tomorrow

_____c. The Health of Tomorrow is the Hands of the Health Professionals

_____d. Tomorrow's Health is Molded by the Hands of HOSA

10. Match the symbols in the HOSA emblem to their correct meanings. Write the correct numbers in the blanks.

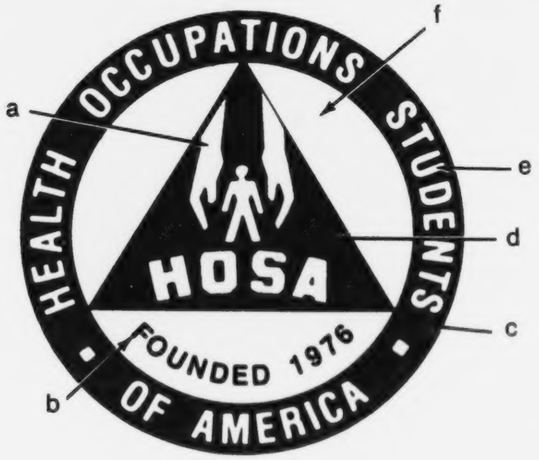
_____a. Three aspects of humankind's well-being: social, physical, and mental

_____b. The caring of each HOSA member

_____c. Continuity of health care

1. Circle
2. Hands
3. Triangle

11. Label the colors of the official HOSA emblem. Write the correct answers in the blanks.



a. ______________________________ d. ______________________________

b. ______________________________ e. ______________________________

c. ______________________________ f. ______________________________

TEST

12. Select from the following list items in the official HOSA dress code for members. Write an "X" in the blank before each correct answer.

_____a. Navy or maroon tie for men

_____b. Navy blue blazer with official HOSA emblem on the sleeve

_____c. White tailored blouse or shirt

_____d. Official HOSA pin

_____e. White blazer with official HOSA emblem on the left breast pocket

_____f. Navy blue or white slacks or skirt

_____g. Navy blue blazer with official HOSA emblem on left breast pocket

_____h. Appropriate shoes

_____i. Maroon shirt with button-down collar

13. Select from the following list benefits of membership in HOSA. Write an "X" in the blank before each correct answer.

_____a. Helps individuals learn to work with others

_____b. Provides guidance to students who seek to develop knowledge, skills, and behavioral characteristics necessary in preparing for a future in a health career

_____c. Helps students develop interest in being a part of the community and civic affairs

_____d. Looks good written on a résumé

_____e. Helps develop leadership qualities

_____f. Introduces students to a wide variety of health career choices

_____g. Helps students associate and exchange information with other students who have similar interests

_____h. Encourages participation in activities other than school courses

_____i. Helps students develop responsibility through service to the local community

_____j. Ensures a good grade in class

_____k. Helps students gain self-confidence through the development of leadership skills and abilities

_____l. Provides opportunity to make new friends

_____m. Helps students to become more introverted

TEST

14. Select from the following list goals of HOSA. Write an "X" in the blank before each correct answer.

______a. To develop effective leadership qualities and skills

______b. To ensure student's ability to secure a position in a health occupation

______c. To promote physical, mental, and social well-being

______d. To develop responsible citizenship traits

______e. To develop an understanding of current health care issues, environmental concerns, and survival needs of the community, the state, the nation, and the world

______f. To earn certification hours for health occupations

15. State the three organizational levels of HOSA. Write the correct answers in the blanks.

a. ____

b. ____

c. ____

16. List types of HOSA chapter activities.

a. ____

b. ____

c. ____

d. ____

e. ____

17. Match chapter officers to their duties. Write the correct numbers in the blanks. Duties continue on the next page.

______a. Gathers and assembles all materials in preparation for the chapter scrapbook

______b. Provides continuity to executive council; is an alumni member

______c. Presides over all chapter meetings; serves as ex officio member on all committee meetings; coordinates and supervises all efforts of chapter officers and committees

______d. Keeps financial records of the chapter

______e. Takes charge of all religious activities during chapter meetings and other functions

______f. Informs all members on correct parliamentary procedures

1. Member-at-large
2. Historian
3. President
4. Chaplain
5. Treasurer
6. Parliamentarian

TEST

_____g. Secures and sets up meeting rooms; attends the door during meetings and greets visitors; makes sure meeting room is comfortable; ensures that the meetings proceed without outside interruption

_____h. Prepares news releases regarding HOSA activities for all media

_____i. Assists the president; presides over chapter activities in the absence of the president; serves as chairman of program committee

_____j. Prepares and reads minutes of all chapter meetings; maintains membership list and record of attendance; answers all chapter correspondence promptly; counts and records all votes; reads all communications at meetings; prepares an agenda for meetings

7. Sentinel
8. Reporter
9. Secretary
10. Vice-president

18. Select from the following list criteria for selection of HOSA voting delegates. Write an "X" in the blank before each correct answer.

_____a. Serving as a state officer

_____b. Active participation in all chapter meetings and assigned committees

_____c. Maintaining a 4.0 grade average

_____d. Successful achievement in classroom assignments and laboratory activities while maintaining achievement in other school subjects

19. Match leadership training activities for HOSA to their correct descriptions. Write the correct numbers in the blanks.

_____a. All members of state association of HOSA can participate; leadership training for local chapter officers is provided; elections of officers for secondary, postsecondary, and collegiate programs are held

_____b. Each summer all members of HOSA can participate in competitive events and leadership-scholarship skills; election of national officers is held

_____c. All members of state association of HOSA can participate; all members are provided with leadership training; competitive events and leadership-scholarship skills are held

_____d. State officers of AIASA, DECA, FBLA, FFA, FHA-HERO, HOSA, and VICA can participate; leadership training is provided

1. Spring HOSA Leadership Conference
2. Fall HOSA Leadership Conference
3. Vocational Leadership Institute
4. National HOSA Leadership Conference

TEST

20. Match terms associated with parliamentary procedure to their correct definitions. Write the correct number in the blanks.

_____a. Taking the votes

_____b. Formal statement of revision or change

_____c. To change the wording of a motion

_____d. Members of the assembly; also the right to speak to the assembly

_____e. Term that indicates incorrect parliamentary procedure

_____f. To indicate formally one's desire to bring a motion or procedure to discussion or vote

_____g. Procedure allowing positive and negative expression on a question or issue

_____h. Number of members needed to be present in order for official business to be transacted

_____i. Set of rules for conducting a meeting in an organized and efficient manner

_____j. List of items to be considered during a meeting

_____k. Proposal that something be done; method of bringing a question before the assembly for consideration

_____l. Record of the proceedings at a meeting

_____m. At least one more than half the legal votes cast

1. Floor
2. Majority
3. Parliamentary procedure
4. Debate
5. Motion
6. Out-of-order
7. Putting the question
8. Quorum
9. Second
10. Minutes
11. Amend
12. Agenda
13. Amendment

21. Select from the following list principles upon which parliamentary procedure is based. Write an "X" in the correct blank before each correct answer.

_____a. Expedition of business

_____b. Consideration of one item of business at a time

_____c. General group discussion

_____d. Justice and courtesy for all

_____e. Instructor serving as an officer

_____f. Maintenance of order

_____g. Financing of class projects

_____h. Majority rule

_____i. Right of the minority to be heard

_____j. Protection of the rights of the individual

_____k. Administration of punishment

TEST

22. Arrange in order the proper sequence of business carried out during a HOSA meeting. Write a "1" in the blank before the first item of business, a "2" in the blank before the second item, and so on until all items are numbered.

_____a. Program

_____b. Committee reports

_____c. Opening ceremony

_____d. Unfinished business

_____e. Closing ceremony

_____f. Entertainment, recreation, refreshments

_____g. Reading and approval of minutes of previous meeting

_____h. New business

23. Match HOSA uses of the gavel to their correct meanings. Write the correct numbers in the blanks. A number may be used more than once.

_____a. Maintain order during meetings

_____b. Signal for adjournment

_____c. Signal for all members to stand

_____d. Signal that a main motion has been passed or rejected

_____e. Call meeting to order

_____f. Signal for all members to be seated

1. One tap
2. Two taps
3. Three taps
4. Sharp tap or series of sharp taps

24. Match types of motions to their correct descriptions. Write the correct numbers in the blanks.

_____a. Has no connection with main motion and outranks other motions

_____b. Introduces business or brings a question directly before the assembly

_____c. Arises from or is related to procedure; may or may not refer directly to the main question

_____d. Modifies or disposes of main motion; must be voted upon before vote is taken on main action

1. Incidental motion
2. Main motion
3. Privileged motion
4. Subsidiary motion

TEST

25. Arrange in order steps to process a main motion. Write a "1" in the blank before the first step, a "2" in the blank before the second item, and so on until all steps are numbered.

______a. Make the motion

______b. Obtain the floor

______c. State the motion

______d. Second the motion

______e. Assign the floor

______f. Put the question

______g. Discuss/debate

______h. Announce vote and state action

26. Match parliamentary motions to their correct purposes. Write the correct numbers in the blanks. Motions and purposes continue on the next page.

______a. Suppresses the question before the assembly without bringing the matter to a vote

______b. Temporarily delays the consideration of an item of business

______c. Obtains information from the presiding officer concerning some question related to the pending question and proper procedure

______d. Calls attention to a violation of the rules or to a mistake in procedure

______e. Secures an accurate vote, especially when the vote has already been taken by voice or show of hands

______f. Formally closes a chapter meeting

______g. Stops debate on the motion or motions before the chapter and secures a vote immediately

______h. Changes the motion or resolution that is being considered to a more satisfactory form

______i. Permits further consideration of a tabled motion

______j. Allows a chapter to take action which it is prevented from taking because of certain parliamentary rules, a previously adopted chapter program, or the standing rules of the chapter

1. Point of order
2. Postpone indefinitely
3. Parliamentary inquiry
4. Lay on the table
5. Division of the assembly
6. Previous question
7. Take from the table
8. Adjourn
9. Amend
10. Suspend the rules

TEST

_____k. Permits the chapter to rescind the vote previously taken on a motion and to consider again the item of business

_____l. Obtains a decision from the chapter to the question on which the president has just rendered a decision

_____m. Permits a member to secure immediate action upon a matter that concerns someone's right and comfort

_____n. Permits the proposer of a motion to remove it from consideration

_____o. Allows a smaller, select group to study the question and report back to the chapter its findings of a study or the accomplishment of an assigned task

_____p. Presents to the chapter the name of a candidate for the office to be filled

_____q. Asks for explanation or additional knowledge relating to the pending business

11. Refer to committee
12. Nomination
13. Request for information
14. Appeal from the decision of the chair
15. Leave to withdraw a motion
16. Question of privilege
17. Reconsider

27. Match the methods of voting to their correct uses. Write the correct numbers in the blanks.

_____a. Used when secret voting is needed

_____b. Used most often on main motions requiring a simple majority vote

_____c. Used to verify a two-thirds vote or when division of the assembly has been called for

_____d. May be used in small meetings to establish or affirm a two-thirds majority

_____e. May be used any time the chair thinks that most members will be in agreement

1. Voice vote
2. General consent
3. Ballot
4. Show of hands
5. Rising vote

(NOTE: Test items 28-30 list assignment sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

28. Give a prepared one-minute talk.

29. Give a three-minute speech.

30. Move a main motion and the previous question.

PROFESSIONAL LEADERSHIP DEVELOPMENT
UNIT IV

ANSWERS TO TEST

1. a. 5
   b. 2
   c. 6
   d. 11
   e. 8
   f. 10
   g. 7
   h. 9
   i. 1
   j. 4
   k. 3

2. b, c, e, f, g, h, i

3. a, b, c, d, f, h, j, k, m, n

4. a. Willingness to work
   b. Self-confidence
   c. Ability to use parliamentary procedure effectively
   d. Ability to make fair and impartial judgments
   e. Neat appearance

5. a. 6
   b. 2
   c. 5
   d. 1
   e. 3
   f. 7
   g. 4

6. a. 3
   b. 1
   c. 2

7. a, d, e, g, h, i

8. a. 4
   d. 5
   e. 1
   f. 2
   g. 7
   i. 6
   j. 3

9. b

10. a. 3
    b. 2
    c. 1

ANSWERS TO TEST

11. a. Medical white
    b. Navy blue
    c. Maroon
    d. Navy blue
    e. Medical white
    f. Medical white

12. a, c, d, f, g, h

13. a, b, c, e, f, g, h, i, k, l

14. a, c, d, e

15. a. Local chapters
    b. State association of HOSA
    c. National HOSA

16. a. Professional activities
    b. Civic activities
    c. Service activities
    d. Social activities
    e. Fund-raising activities

17. a. 2
    b. 1
    c. 3
    d. 5
    e. 4
    f. 6
    g. 7
    h. 8
    i. 10
    j. 9

18. b, d

19. a. 2
    b. 4
    c. 1
    d. 3

20. a. 7
    b. 13
    c. 11
    d. 1
    e. 6
    f. 9
    g. 4
    h. 8
    i. 3
    j. 12
    k. 5
    l. 10
    m. 2

ANSWERS TO TEST

21. a, b, d, f, h, i, j

22. a. 6
b. 3
c. 1
d. 4
e. 7
f. 8
g. 2
h. 5

23. a. 4
b. 1
c. 3
d. 1
e. 2
f. 1

24. a. 3
b. 2
c. 1
d. 4

25. a. 3
b. 1
c. 5
d. 4
e. 2
f. 7
g. 6
h. 8

26. a. 2
b. 4
c. 3
d. 1
e. 5
f. 8
g. 6
h. 9
i. 7
j. 10
k. 17
l. 14
m. 16
n. 15
o. 11
p. 12
q. 13

27. a. 3
b. 1
c. 5
d. 4
e. 2

28. Evaluated to the satisfaction of the instructor

29. Evaluated to the satisfaction of the instructor

30. Evaluated to the satisfaction of the instructor

CAREER SUCCESS
UNIT V

SUGGESTED ACTIVITIES

I. Unit contents

   A. Objective sheet

   B. Suggested activities

   C. Supplements

      1. Supplement #1 — Crossword Puzzle

      2. Supplement #2 — Who Doesn't Get the Job

      3. Supplement #3 — Dear Abby

   D. Transparency masters

      1. TM #1 — Résumé Highpoints

      2. TM #2 — Dress Appropriately

      3. TM #3 — Ladder of Success

   E. Information sheet

   F. Assignment sheets

      1. Assignment Sheet #1 — Prepare a Résumé

      2. Assignment Sheet #2 — Use a Telephone to Arrange a Job Interview

      3. Assignment Sheet #3 — Write a Cover/Application Letter

      4. Assignment Sheet #4 — Complete an Employment Application Form

      5. Assignment Sheet #5 — Participate in a Job Interview

      6. Assignment Sheet #6 — Write a Follow-Up Letter

      7. Assignment Sheet #7 — Evaluate a Job Offer

      8. Assignment Sheet #8 — Ask for a Raise

      9. Assignment Sheet #9 — Write a Letter of Resignation

      10. Assignment Sheet #10 — Evaluate Personal Habits Associated with Career Success

      11. Assignment Sheet #11 — Interview an Employer

SUGGESTED ACTIVITIES

G. Answers to assignment sheets

H. Test

I. Answers to test

II. Instructor's guide

A. Order materials to supplement unit.

1. Films

(NOTE: These films are available to Oklahoma teachers on a free-loan basis. Oklahoma teachers may order from the Oklahoma State Department of Vocational and Technical Education, Film Library, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.

Out-of-state teachers may order the films from the addresses listed with the film titles.)

a. *Get That Job: Line Up Your Interview.* Color, 11 minutes, 1976. Available from Coronet Films, 63 East South Water Street, Chicago, Illinois 60601.

(NOTE: In this film the viewer learns how to organize a résumé, how to write an effective introductory letter, how to choose the right job objective, and how to get the job.)

b. *Applying for a Job.* Color, 13 minutes, 1971. Available from Encyclopedia Britannica Educational Corporation, 425 North Michigan Avenue, Chicago, Illinois 60611.

(NOTE: This film indicates the wide range of services provided at a state employment agency. Film also shows an actual job application and interview procedures.)

c. *Getting a Job Is a Job.* Color, 20 minutes, 1968. Available from Dibie-Dash Productions, 494 Hollywood Boulevard, Suite 217, Hollywood, California 90028.

(NOTE: This film examines some prerequisites to getting a job such as self-analysis, preparing a personal data sheet, and considering job sources.)

d. *Your Job: Applying for It.* Color, 13 minutes, 1970. Available from Coronet Films, 63 East South Water Street, Chicago, Illinois 60601.

(NOTE: Illustrated are typical ways of applying for a job. Stressed are the importance of getting enough good leads, of perseverance, your appearance, and making the most of your assets.)

SUGGESTED ACTIVITIES

   e. *Job Interview: I Guess I Got the Job.* Color, 13 minutes, 1975. Available from McGraw-Hill Films, 1221 Avenue of the Americas, New York, New York 10020.

      (NOTE: Flashbacks view different approaches of two male applicants applying for the same position and the resulting impression each leaves with the interviewer.)

2. Pamphlets

   (NOTE: The pamphlets below or similar ones are available from the nearest state employment agency.)

   a. "How to Get and Hold the Right Job"

   b. "How to Prepare Yourself for Job Interviews"

   c. "How to 'Sell Yourself' to an Employer"

3. Film and videocassettes—Critical Steps of Job Interviewing

   (NOTE: This program is designed to assist students in developing basic interviewing competencies. It is a 3 ½- to 4-hour program, including programmed reading exercises, listen/respond exercises, and structured role-plays. The administrator's kit includes instructor's manual, 16 mm film, and five cassettes. The program is available for purchase from the State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

4. Transparencies and competency profiles

   (NOTE: Transparencies and competency profiles are available from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

B. Introduce unit by stressing the need to be organized and to have everything ready when applying and interviewing for a job.

   - Show films related to preparing for, applying for, and interviewing for a job.

   - Discuss the importance of being organized.

C. Provide students with objective sheet.

D. Discuss unit and specific objectives.

E. Provide students with information and assignment sheets.

F. Discuss information and assignment sheets.

SUGGESTED ACTIVITIES

1. Discuss Information Sheet, Section I, to acquaint students with terminology related to career success.
   - Use newspapers to demonstrate the different types of employment ads as given in the terms.
   - Stress the importance of evaluating the ads to make sure of qualifications before applying for a position.
   - Relate the importance of knowing terms related to employment ads, job applications, and interviews.
   - Have sample ads on hand to let the students decipher them.
   - When discussing attitude, explain the self-fulfilling prophecy and how it can relate to career success or failure.
   - Give students Supplement #1 and have them complete the crossword puzzle.
2. Use Information Sheet, Section II, to make students aware of job training sources available.
   - Collect pamphlets from various sources of job training and make a bulletin board.
   - Point out the ads on national television for technical school training.
   - Ask students to research a particular source and make a report to class on information obtained.
3. Use Information Sheet, Section III, to stress to students that learning will not end upon completion of a health education program, and that they will have responsibilities as health professionals.
   - Ask a former student to speak to the students about furthering their educations and what it takes to be successful in their chosen fields.
   - Mention that some occupations have mandatory continuing education requirements. Explain that this is decided by governing bodies, and that the requirements usually consist of refresher courses.

     EXAMPLE: In some states licensed nurses have to complete continuing education courses prior to recertification.
4. Reinforce the Information Sheet, Section IV, on characteristics employers seek in their employees.
   - Share Supplement #2 with the class.
   - Ask a personnel director to speak to the students concerning what characteristics an employer looks for in an employee and what applicants need to do to convey to prospective employers that they possess these characteristics.

SUGGESTED ACTIVITIES

- Give examples of occupations and specific traits needed for them; e.g., an orthotics/prosthetics assistant would need a good background in basic mathematics.

5. Discuss Information Sheet, Sections V-XIII, to assist students in applying for a job.

   - Have the students write a short summary of their strengths that may be useful in their occupational area. Have them also state how their weaknesses can be improved.
   - Show Transparency #1 when discussing résumés.
   - Stress that the tone of voice used when telephoning for an interview may determine the employer's first impression.
   - Invite a business and office instructor to discuss letters of application with the class.
   - Use Assignment Sheets #1-#4 to help students practice applying for a job.
   - Role-play Assignment Sheet #2 to help students feel more comfortable in using the telephone to set up an interview. Use a tape recorder for students to evaluate their own techniques.
   - Show Transparency #2 to introduce a discussion on dressing for an interview.
   - Stress that the job market is highly competitive, and during the interview, the student must present herself/himself as the right person for the job and must convince the employer.
   - Point out that in discussing past work experience, the applicant should avoid finding fault with previous employers.
   - Use film and videocassettes *Critical Steps for Job Interviewing* to help students practice for job interviews.
   - Have students complete Assignment Sheets #5 and #6 to practice job interview skills.
   - Use Assignment Sheets #5 and #6 to practice for the Job Seeking Skills competition in HOSA.
   - Ask a personnel director or the official at your school who interviews prospective employees, to role-play in your class with students to practice their interviewing skills.

SUGGESTED ACTIVITIES

6. Discuss Information Sheet, Section XIV, and emphasize the need for the student to evaluate jobs and the employee benefits.
    - Explain that sometimes the take-home pay may be better from an employer that offers no benefits, but benefits can add up quickly.
    - Use Assignment Sheet #7 to allow students to practice evaluating job offers.
7. Discuss Information Sheet, Sections XV-XVII to help students develop a positive outlook toward their jobs and toward continuing their educations.
    - Have students complete Assignment Sheets #8-#10 to help them in assessing and evaluating their success in the job market.
    - Show Transparency #3 and discuss the steps to career success.
    - Have students complete Assignment Sheet #11 to allow them to see a job from the employer's point of view.

G. Give test.

H. Reteach and retest if necessary.

I. Complete appropriate section of students' competency profiles.

III. Unit references

A. Reid, Jamee Noell. *Practical Nursing: Volume III.* Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1984.

B. Rosdahl, Caroline Bunker. *Textbook of Basic Nursing*, 3rd ed. Philadelphia: J.B. Lippincott Company, 1981.

C. Schweiger, Joyce F. *The Nurse As Manager.* New York: John Wiley & Sons, 1980.

CAREER SUCCESS
UNIT V

SUPPLEMENT #1 — CROSSWORD PUZZLE

Use the following clues to work the crossword puzzle on the next page.

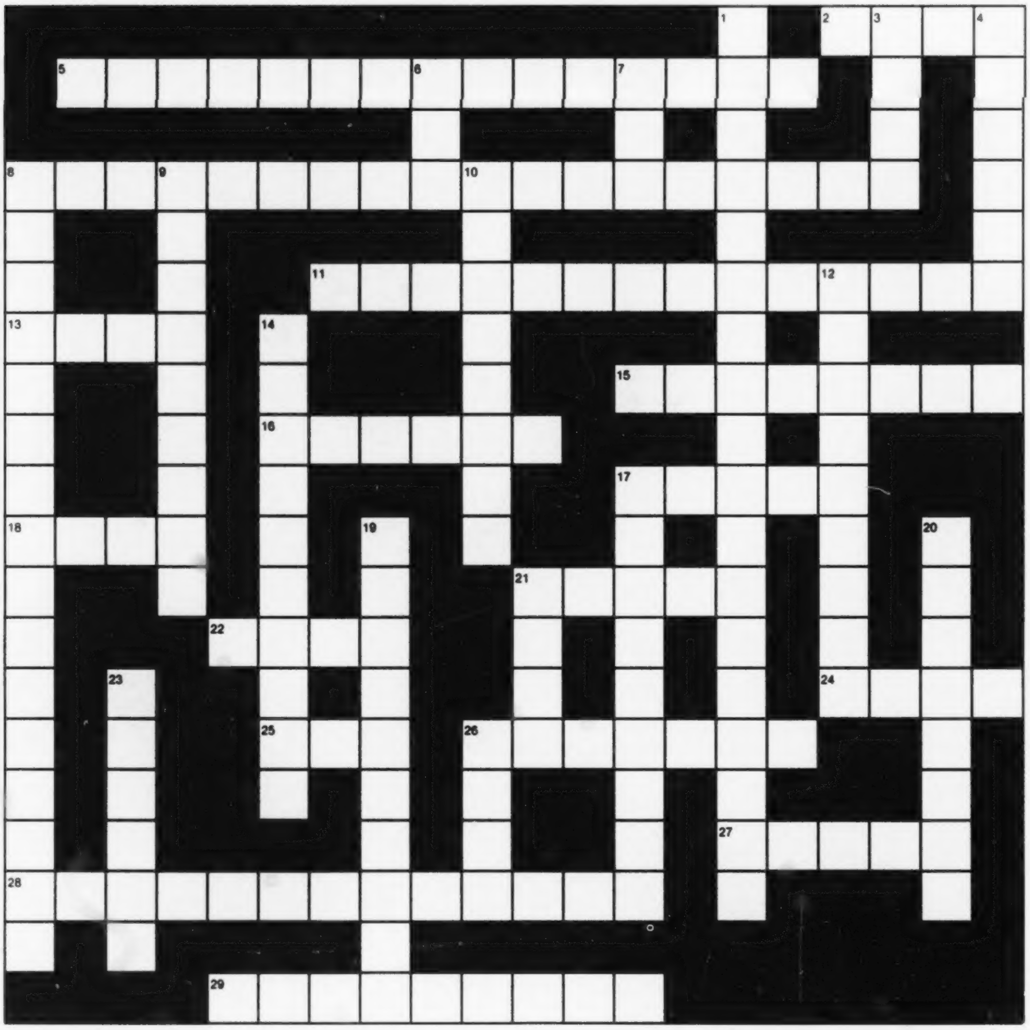
ACROSS

2. False
5. Printed form on which job applicant records information (2 wds)
8. Ad placed by individual seeking a job (3 wds)
11. Process of getting along with people (2 wds)
13. Extremity
15. Feelings about people, things, and ideas
16. If it is not private, it is ______
17. Caution color on traffic lights
18. Way out
21. Short expression of a guiding principle
22. Ego
24. Not narrow
25. Mongrel
26. Ad that does not identify the advertiser (2 wds)
27. Automatic action
28. Sharing of a message
29. Where want ads are found

DOWN

1. Vita (2 wds)
3. Eager
4. Standard of behavior
6. Metal alloy
7. Enthusiast
8. Business designed to help people find jobs (2 wds)
9. ____________insurance, a fringe benefit
10. Preparation for an occupation
12. Meeting with a prospective employer
14. Occupational background
17. Not morning
19. Written endorsements
20. To receive a diploma
21. Post
23. Personal data sheet
26. What you put on a fish hook

SUPPLEMENT #1 — CROSSWORD PUZZLE



SUPPLEMENT #1 — CROSSWORD PUZZLE

														1 B		2 F	3 A	K	4 E
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8 E	M	P	9 L	O	Y	M	E	N	10 T	W	A	N	T	E	D	A	D		I
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28 C	O	M	M	U	N	I	C	A	T	I	O	N		Y				E	
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				29 N	E	W	S	P	A	P	E	R							

CAREER SUCCESS
UNIT V

SUPPLEMENT #2 — WHO DOESN'T GET THE JOB

Who Doesn't Get The Job

Some 186 companies were recently asked to list the negative factors which most often cause the company not to hire a job applicant. The factors cited by 20 or more companies are listed below. (The number of companies listing the factor is in parentheses.)

1. Poor scholastic record—low grades without reasonable explanation (99).

2. Inadequate personality—poor attitude, lack of poise, lack of self-confidence, timid (89).

3. Lack of goals/objectives—poorly motivated, does not know his/her interests (80).

4. Lack of enthusiasm—lack of drive, not sufficiently aggressive (50).

5. Lack of interest in our type of business—lack of interest in our company, not interested in the type of job we have to offer (48).

6. Inability to express himself/herself—poor speech (45).

7. Unrealistic salary demands—more interested in salary than in opportunity, unwilling to start at the bottom (39).

8. Poor personal appearance—careless dress (35).

9. Lack of maturity—no evidence of leadership potential (35).

10. Lack of extracurricular activities, inadequate reasons for not participating in activities (22).

11. Failure to get information about our company—lack of preparation for the interview, did not read the literature (22).

12. Objects to travel—unwilling to relocate (20).

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CAREER SUCCESS
UNIT V

SUPPLEMENT #3 — DEAR ABBY

Teens Shown Through Boss' Eyes

DEAR ABBY: I've had a clipping of your column pasted in the front of our job application book for 12 years.

Since we hire so many teenagers, I hope some of them read it while filling out their applications. By the looks of it, I think they have. It's so dog-eared and yellowed nobody can make out the last half of it. Could you please print it again? We need a new one. Thank you.

**—The Golden Egg Omelet House,
Novato, Calif.**

DEAR GOLDEN EGG: The clipping looks as though it's been fried, poached and scrambled. Here's a clean copy for you:

DEAR ABBY: I am enclosing a newspaper clipping that appeared in a section of the paper that very few teenagers read.

I think it should be in your column—or maybe in the comics, where teen-agers would be sure to see it.

If you agree with me, please print it. Thank you.

**—Mrs. E.B.Clingner,
Covington, Ky.**

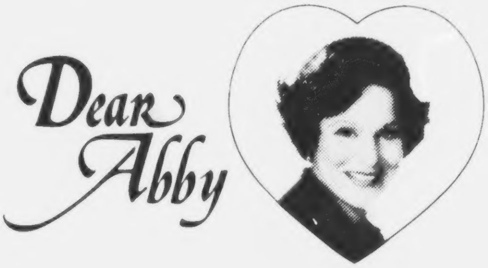
DEAR MRS. C.: The piece appeared in the Cincinnati Enquirer, in William Raspberry's column. It was written by Karen Rak, who teaches English to students at Center Junior High School in Strongville, Ohio.

Ms. Rak composed a letter (ostensibly from an employer) designed to let her youthful jobseekers see themselves as they are seen. With so many young people looking for jobs now, I think this piece deserves all the exposure it can get.

"DEAR KID: Today you came to me for a job. From the look of your shoulders as you walked out, I suspect you've been turned down before, and maybe you believe by now that kids your age can't find jobs.

"But I hired a teen-ager today. You saw him. What was so special about him? Not experience; neither of you had any. Attitude, son. A-T-T-I-T-U-D-E. He did his best to impress me. That is where he edged you out.

"He wasn't dressed like Easter Sunday, but then that wasn't necessary. His clothes were clean, and he had gotten a haircut. He filled out the application form neatly and completely. He did not ask to borrow a pen. He carried his Social Security card, had basic identification and did not ask, "What's a reference?"



"He didn't have two friends waiting for him by the pop machine. He didn't start to chew gum or smoke while being interviewed. He didn't keep looking at his watch, giving me the impression that he had something more important to do.

"He took time to find out how we operate here, and what his day-to-day tasks would be. I think he'll keep his eyes open and work for me like he'd work for himself.

"He was willing to start at that point where I could afford to pay. Someday, perhaps, he'll get to the point where he'll have more authority over others and a better paycheck.

"You know, kid, men have always had to get a job like you get a girl: case the situation, wear a clean shirt, and try to appear reasonably willing.

"Maybe jobs aren't as plentiful right now, but there are jobs. You may not believe it, but all around you employers are looking for young men and women smart enough to go after a job in the old-fashioned way.

"If you have even the vaguest idea of what I'm trying to say, let it show the next time you ask for a job. You will be head and shoulders above the rest.

"For both our sakes, get eager, will you?

—The Boss"

Taken from the "Dear Abby" column by Abigail Van Buren.
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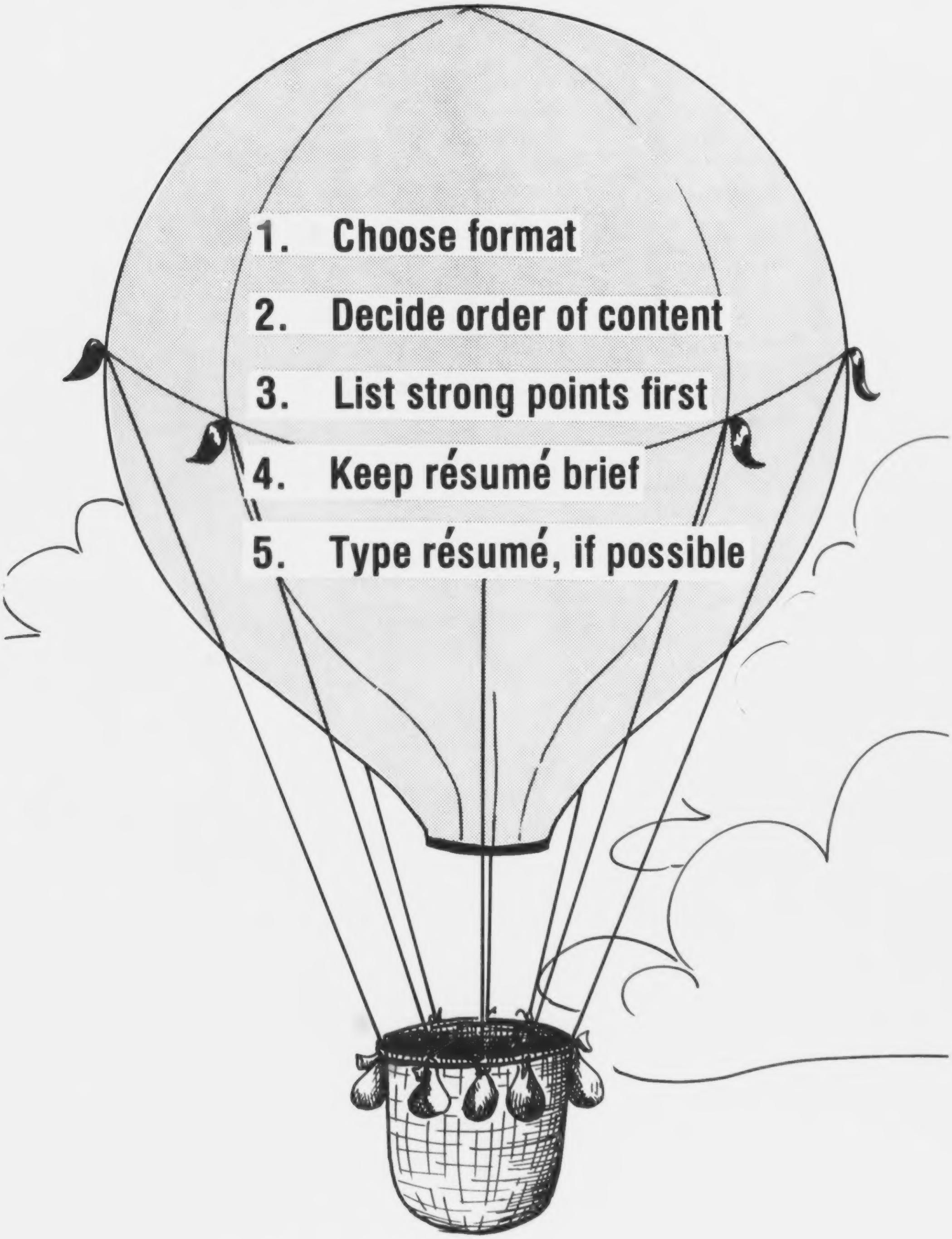
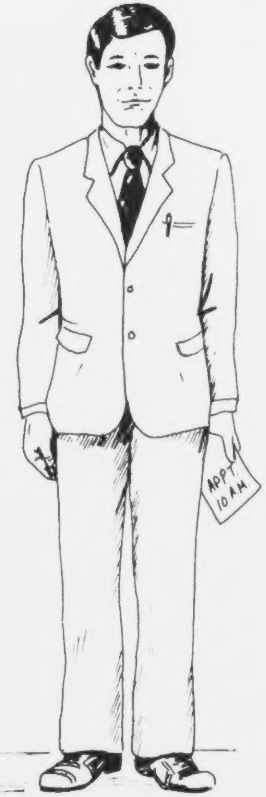
Résumé Highpoints



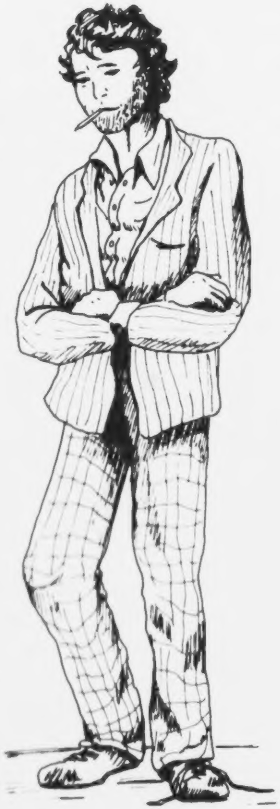
1. Choose format
2. Decide order of content
3. List strong points first
4. Keep résumé brief
5. Type résumé, if possible

Dress Appropriately

What qualities make one of these applicants a ''winner'' and the other ''woeful''?

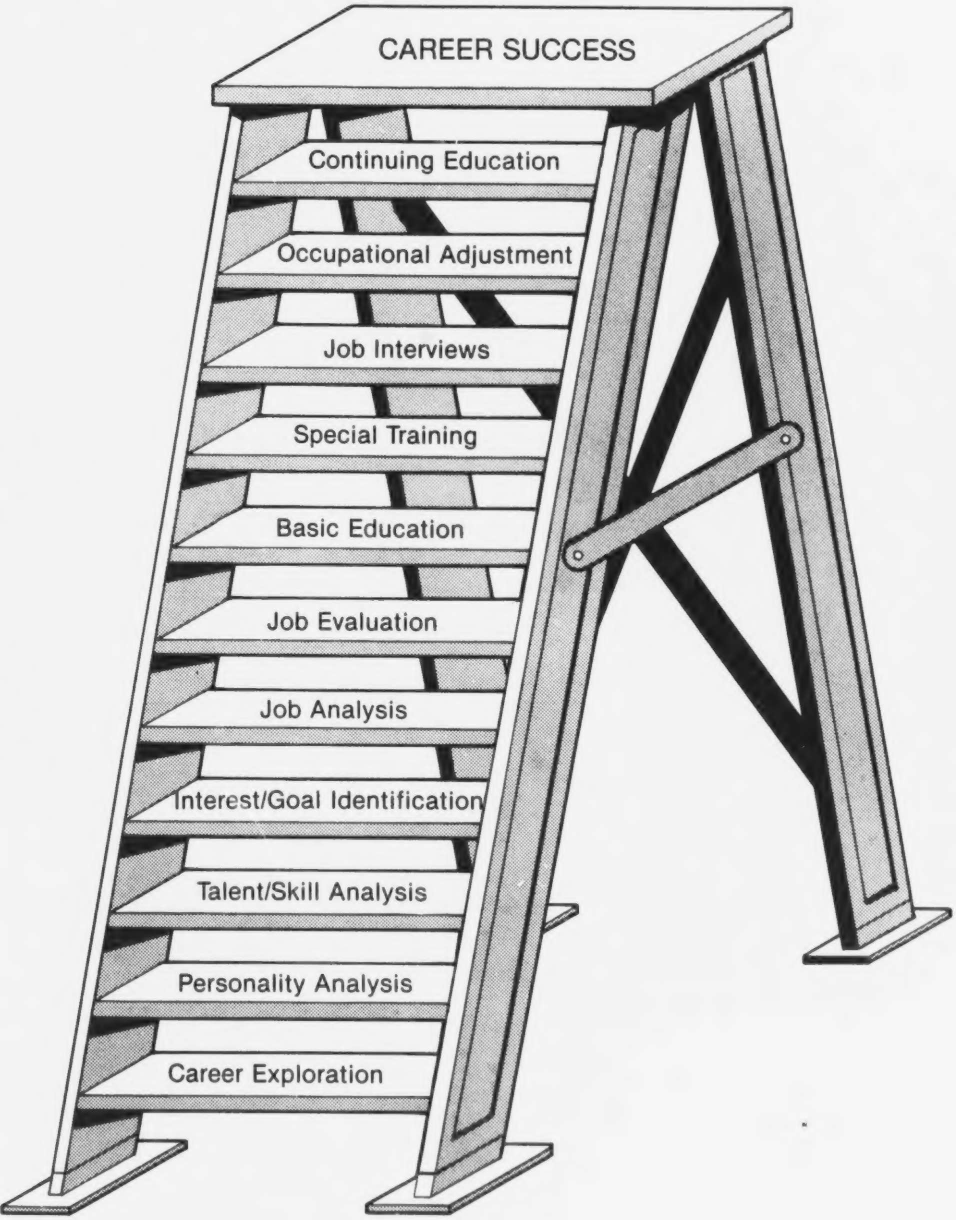


Winner Willie



Woeful Willie

Ladder of Success



CAREER SUCCESS
UNIT V

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheets #1-#9, #11 — Evaluated to the satisfaction of the instructor

(NOTE: Assignment Sheet #10 should not be evaluated.)

CAREER SUCCESS
UNIT V

TEST

NAME ______________________________ SCORE ______________

1. Match terms associated with career success to their correct definitions. Write the correct numbers in the blanks. Definitions continue on the next page.

_____a. Business designed to help individuals find employment

_____b. Written summary of information about an individual that would be of interest to a prospective employer, or a brief autobiographical sketch

_____c. On-going alertness for any new knowledge or training

_____d. Code or standard of behavior; professional conduct

_____e. Continuous process of getting along with others

_____f. Classified advertisement placed by individual seeking employment and indicating job seeker's qualifications

_____g. Action that is acquired and has become automatic; tendency to perform a certain action

_____h. Information about a job and skills needed to perform a job

_____i. Printed form on which job applicant briefly records personal history, job history, job experience, education, and references

_____j. Advertisement telling what kind of job is available and what kind of qualifications are required

_____k. Agency that supplies health care workers to various health care facilities, usually on a temporary basis

_____l. Classified advertisement that does not identify the advertiser

_____m. Letter of application sent to a company but not to a specific person; usually the letter begins "To Whom It May Concern"

1. Communication
2. Job enrichment program
3. Employment/situation wanted ad
4. Attitude
5. Blind ad
6. Habit
7. Help wanted ad
8. Technical knowledge
9. Ethics
10. Vita/résumé/personal data sheet
11. Learning attitude
12. Blind letter
13. Medical personnel service
14. Human relations
15. Application form
16. Employment agency

TEST

______n. Feelings about people, things, and ideas

______o. Sharing of a message or an idea

______p. Activities designed for worker improvement; may be in the form of demonstrations, meetings, or short conferences

2. List four types of sources for job training.

   a. ______________________________

   b. ______________________________

   c. ______________________________

   d. ______________________________

3. State six career-related responsibilities of the individual in a health occupation.

   a. ______________________________
   ____

   b. ______________________________
   ____

   c. ______________________________
   ____

   d. ______________________________
   ____

   e. ______________________________
   ____

   f. ______________________________
   ____

4. Select from the following list characteristics that employers look for in an employee. Write an "X" in the blank before each correct answer.

   ______a. Ability to develop shortcuts for most procedures

   ______b. Efficiency in planning work time carefully and using equipment properly

   ______c. Ability to learn institutional procedures and policies

   ______d. Ability to stand up for yourself if given a task you dislike

TEST

_____e. Cooperation with all fellow employees

_____f. Ability to perform work safely and accurately

_____g. Honesty in all you do and say

_____h. No desire to take advantage of continuing education opportunities

_____i. Dependability to be at work on time whenever scheduled

_____j. Knowledge of all skills required for the job and willingness to learn new skills

5. Select from the following list steps in finding a job. Write an "X" in the blank before each correct answer.

_____a. Prepare for a job interview

_____b. Complete a physical exam

_____c. Write down a complete self-inventory

_____d. Take a college entrance test

_____e. Buy malpractice insurance

_____f. Make a list of possible contacts to help you in your job search

_____g. Contact possible employers at home

_____h. Make a list of employer possibilities

6. Name five sources for locating employment opportunities.

a. ____

____

b. ____

____

c. ____

____

d. ____

____

e. ____

____

TEST

7. Distinguish between private and public employment agencies specializing in health care positions. Write "PRI" in the blank before private agency, and "PUB" in the blanks before public agency. A blank may have more than one correct answer.

   ______a. Are controlled by state laws

   ______b. Are usually licensed and bonded

   ______c. Give helpful aptitude tests and counseling if needed

   ______d. May charge a placement fee for services

   ______e. Have specific minimum requirements

   ______f. Are supported by state or federal government funds

   ______g. Require a signed contract between employee and employer

8. List six guidelines for telephoning for an interview appointment.

   a. ______________________________

   ____

   b. ______________________________

   ____

   c. ______________________________

   ____

   d. ______________________________

   ____

   e. ______________________________

   ____

   f. ______________________________

   ____

9. List five steps in preparing for a job interview.

   a. ______________________________

   ____

   b. ______________________________

   ____

   c. ______________________________

   ____

TEST

d. ____

____

e. ____

____

10. List documents needed when applying for a job.

a. ____

b. ____

c. ____

11. Select from the following list guidelines for dressing for an interview. Write an "X" in the blank before each correct answer.

_____a. Strive to look fashionable

_____b. Be well-groomed

_____c. Dress appropriately for the type of job you are seeking

_____d. Coordinate clothing

_____e. Wear your most comfortable clothing

_____f. Be conservative and modest

12. Select from the following list guidelines for a successful interview. Write an "X" in the blank before each correct answer.

_____a. Act enthusiastic about the position

_____b. Greet the interviewer(s) by name and use appropriate title(s); state your name and the job for which you are applying

_____c. Discuss personal life to help get better acquainted

_____d. Remain standing until invited to be seated

_____e. Use good posture

_____f. Answer questions directly and truthfully

_____g. Speak freely, distinctly, and to the point

_____h. Listen attentively

_____i. Use tact in asking for information that has been overlooked

_____j. Emphasize your political views

_____k. Focus attention on your strong points; admit limitations honestly

_____l. Recognize when the interview is over; thank the interviewer(s), reemphasize your interest in the position, and leave courteously

TEST

_____m. Discuss any changes that you see need to be made in the facility

_____n. Write a follow-up letter thanking the employer for the interview

_____o. Maintain good eye contact

_____p. Arrive early

_____q. Dress in your most comfortable clothes

_____r. Chew gum to help you stay relaxed

_____s. Be courteous and friendly to the receptionist and all others in the office

_____t. Do not smoke

_____u. Maintain a composed, calm manner

_____v. Tell the receptionist or secretary your name, whom you are to see, why you are there, and the time of your appointment

13. List four common categories of observations made by an employer during an interview.

a. ____

b. ____

c. ____

d. ____

14. List eight common employee benefits.

a. ____

____

b. ____

____

c. ____

____

d. ____

____

e. ____

____

f. ____

____

TEST

g. ____

____

h. ____

____

15. State four ways to increase self-satisfaction in a career.

a. ____

____

b. ____

____

c. ____

____

d. ____

____

16. List three ways to continue your education in a health occupation.

a. ____

____

b. ____

____

c. ____

____

17. Select from the following list major reasons why people lose jobs. Write an "X" in the blank before each correct answer.

_____a. Lack of assertiveness

_____b. Lack of technical knowledge

_____c. Chemical abuse

_____d. Introverted personality

_____e. Poor human relations and attitude

_____f. Low dedication to work ethic

TEST

(NOTE: Test items 18 through 26 list assignment sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

18. Prepare a résumé.
19. Use a telephone to arrange a job interview.
20. Write a cover/application letter.
21. Complete an employment application form.
22. Participate in a job interview.
23. Write a follow-up letter.
24. Evaluate a job offer.
25. Ask for a raise.
26. Write a letter of resignation.

CAREER SUCCESS
UNIT V

ANSWERS TO TEST

1. a. 16
   b. 10
   c. 11
   d. 9
   e. 14
   f. 3
   g. 6
   h. 8
   i. 15
   j. 7
   k. 13
   l. 5
   m. 12
   n. 4
   o. 1
   p. 2

2. Answer should include any four of the following

   a. On-the-job training (apprenticeship)
   b. Extension courses
   c. Correspondence and TV courses
   d. Community and junior colleges
   e. Colleges and universities
   f. Area vocational and technical schools
   g. Specialized military training
   h. Career training schools

3. Answer should include any six of the following

   a. Maintain license or certificate as outlined by board
   b. Follow all guidelines set by the licensing or certifying agency
   c. Uphold standards to provide consistent, safe, quality care
   d. Become a model of professionalism in dress, act, and demeanor
   e. Become an active member in your professional organizations
   f. Keep current in your profession by taking the opportunities available to learn new skills and knowledge
   g. Maintain an open mind at all times by striving to be nonjudgmental
   h. Protect yourself in all practices by performing only procedures in which you are skilled
   i. Obtain personal liability insurance
   j. Document all procedures, equipment used, and client responses

4. b, c, e, f, g, i, j

5. a, c, f, h

ANSWERS TO TEST

6. Answer should include any five of the following

   a. Other people
   b. Newspapers
   c. Employment agencies
   d. Former employers
   e. Health facility personnel offices
   f. School placement service
   g. Professional journal and newsletters
   h. Medical personnel service

7. a. PRI, PUB
   b. PRI
   c. PUB
   d. PRI
   e. PRI
   f. PUB
   g. PRI

8. Answer should include any six of the following

   a. Plan in advance what you want to say
   b. Call during regular business hours
   c. State your name clearly; spell it if necessary
   d. Speak confidently, clearly, and distinctly
   e. Be courteous and businesslike
   f. Request a personal interview; make sure to state which job you wish to apply for
   g. Be certain of the time and place of the appointment, and write down the pertinent information
   h. Ask what documents you should bring to the interview
   i. Ask who will be conducting the interview so that you can address the interviewer(s) by name and use appropriate title(s)
   j. Make the conversation brief and to the point, thank the person for the appointment

9. Answer should include any five of the following

   a. Learn what you can about the institution or office
   b. Find out who will be interviewing you so that you can address them by names and appropriate titles
   c. Know what you have to offer
   d. Know why you want to work for the institution or office
   e. Assemble necessary papers
   f. Contact people you would like to use as references for permission to do so
   g. Make extra copies of your résumé
   h. Gather information and an appropriate pen to fill out an employment application form
   i. Get a good night's rest the night before the interview

ANSWERS TO TEST

10. a. Personal data sheet, résumé, or vita
    b. Letter of application
    c. Evidence of education

11. b, c, d, f

12. a, b, d, e, f, g, h, i, k, l, n, o, p, s, t, u, v

13. Answer should include any four of the following

    a. General appearance
    b. Manners and personality
    c. Self-expression
    d. Past work experience
    e. Education and personal preparation
    f. Personal interests and activities

14. Answer should include any eight of the following

    a. Hospitalization and life insurance for the employee
    b. Paid time off for vacations, holidays, coffee or rest breaks, sick leave
    c. Opportunity to belong to a credit union
    d. Merit pay
    e. Retirement plan
    f. Savings bonds
    g. Tax-sheltered annuities
    h. Dental insurance
    i. Liability insurance
    j. Subsidized cafeteria
    k. Medications and treatment at a discount
    l. Preemployment physical
    m. Continuing education programs
    n. Parking lot spaces
    o. Shift differential pay
    p. Unemployment compensation or insurance
    q. Worker's compensation
    r. Uniforms

15. Answer should include any four of the following

    a. Have a positive attitude
    b. Be enthusiastic
    c. Keep an open mind
    d. Read journals, newsletters, and textbooks available that pertain to your profession
    e. Join and be active in your professional organizations
    f. Volunteer to attend any workshops or in-service programs that your institution might offer

ANSWERS TO TEST

16. Answer should include any three of the following

    a. Attend in-service programs
    b. Take courses at junior colleges or universities
    c. Take courses offered by professional organizations
    d. Take adult education courses in vocational and technical schools
    e. Take home-study courses

17. b, c, e, f

18. Evaluated to the satisfaction of the instructor

19. Evaluated to the satisfaction of the instructor

20. Evaluated to the satisfaction of the instructor

21. Evaluated to the satisfaction of the instructor

22. Evaluated to the satisfaction of the instructor

23. Evaluated to the satisfaction of the instructor

24. Evaluated to the satisfaction of the instructor

25. Evaluated to the satisfaction of the instructor

26. Evaluated to the satisfaction of the instructor

PERSONAL HEALTH
UNIT I

SUGGESTED ACTIVITIES

I. Unit contents

   A. Objective sheet

   B. Suggested activities

   C. Supplements

      1. Supplement #1 — Crossword Puzzle
      2. Supplement #2 — Common Phobias
      3. Supplement #3 — Functions of Nutrients
      4. Supplement #4 — Recommended Daily Dietary Allowances
      5. Supplement #5 — Diets Prescribed for Certain Conditions
      6. Supplement #6 — Eating Disorders
      7. Supplement #7 — Social Readjustment Rating Scale
      8. Supplement #8 — "Plain Talk" About Stress
      9. Supplement #9 — Relaxation Exercises

   D. Transparency master: TM #1 — Family Crises

   E. Information sheet

   F. Assignment sheets

      1. Assignment Sheet #1 — Evaluate Personal Health and Grooming Habits
      2. Assignment Sheet #2 — Select Foods that Meet Minimum Nutritional Needs
      3. Assignment Sheet #3 — Identify Defense Mechanisms

   G. Answers to assignment sheets

   H. Test

   I. Answers to test

SUGGESTED ACTIVITIES

II. Instructor's guide

A. Obtain materials to supplement unit.

1. *Nutritive Value of Foods.* United States Department of Agriculture, 1981. This USDA bulletin lists the food values for more than 700 items. Additional tables show the yield of cooked meat per pound of raw meat, RDAs and average height and weight for different age groups, and food sources of basic nutrients. Available from Oklahoma State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.

2. Films

   (NOTE: These films are available on a free-loan basis to Oklahoma teachers only. Oklahoma teachers may order the films from the Oklahoma State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, Film Library, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364. Other teachers may order from the addresses listed with the films.)

   a. *Good Looks/Here and Now.* 18 minutes, 1973. Order from Modern Talking Picture Service, 5000 Park Street North, Petersburg, Florida 33709. This informative film on good grooming stresses personal cleanliness and its importance.

   b. *Look Before You Eat.* 22 minutes, 1978. Order from Churchill Films, 622 North Robertson Boulevard, Los Angeles, California 90069. The film examines the roles of the food industry, fast foods, and vending machines; the film also takes a look at our eating habits and their relationship to our health.

3. Computer software

   (NOTE: These programs are available from Teachware, P.O. Box 94365, Oklahoma City, Oklahoma 73143.)

   a. *Health Awareness Games.* Manufactured by HRM for the Apple, IBM, TRS80, and Commodore computers. Software offers five interactive programs relating to students' personal health and life-styles to how well and how long they will live. Programs include Coronary Risk, Why Did You Smoke, Exercise and Weight, Life Expectancy, Life-Style.

   b. *Health Risk Appraisal.* Manufactured by HRM for the Apple, IBM, TRS80 computers. Software gets your students involved in active dialogue with the computer about health-related behavior. It appraises their health habits and personalizes suggestions for improving these habits.

SUGGESTED ACTIVITIES

4. Board game — *Super Sandwich*. Available from Carolina Biological Supply, 2700 York Road, Burlington, North Carolina 27215. Designed to appeal to ages 10 to adult, this board game has the players go to breakfast, lunch, and dinner as they try to be the first to get a balanced daily diet. Fattening snacks, nutritious between-meal snacks, and trips to the gym make the game fun.

5. Biodots, available from Biodots International, Inc., P.O. Box 2246, Indianapolis, Indiana 46206. Biodots, which are applied to a person's hand, change color according to skin temperature and indicate the degree of stress that the person is experiencing.

6. Competency profiles

   (NOTE: Competency profiles for this manual are available from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

B. Introduce unit.

- Stress the importance of good physical health and how it impacts on every aspect of our lives. Point out the effects of poor nutrition, lack of rest, etc.
- Explain how nutritional intake can affect performance, energy levels, and health.
- Discuss the effects that working families, processed foods, fast foods, and junk foods have on nutrition today.
- Illustrate how poor appearance has a negative influence on employment and social activities.

C. Provide students with objective sheet.

D. Discuss unit and specific objectives.

E. Provide students with information and assignment sheets.

1. Use Information Sheet, Section I, to discuss terms and definitions associated with personal health.
   - Discuss the meaning of health, using the spectrum from total health to illness.
   - Have students describe emotions and the physical effects that result from anger, fear, etc.

SUGGESTED ACTIVITIES

- Discuss the meaning of personality, reinforcing the fact that the personality is the total person and not just a few positive or negative factors. Everyone has good points as well as faults, and each person is a person of worth.
- Point out some mannerisms or habits you have. Have the students discuss their own or ones they have observed in others. Stress that often people are not aware of some of their own habits.
- Describe the three levels of the mind according to Freud (conscious, unconscious, and subconscious). Relate the levels of the mind to memories. Mention that every experience that happens to people is stored in their minds whether they can recall it or not.
- Give out Supplement #2 and discuss phobias. Stress that these are not always mild fears; some can reach the point of terror.
- Use Supplement #1, the crossword puzzle, to review terms associated with personal health.

2. Use Information Sheet, Section II, to discuss characteristics that show good health.
    - Point out that the appearance of good health—and the reverse—can be misleading. Demonstrate this by putting on a color of makeup that makes you look tired.
    - Pay particular attention to the way you look when teaching this section so that you can demonstrate positive characteristics.
    - Have the students look up articles on prominent sports figures and then describe qualities of good health that they show.
3. Use Information Sheet, Section III, to discuss factors that influence health and appearance.
    - Have students discuss how they have felt after not eating properly or not getting enough sleep.
    - Explain how physical and mental health are related, and that stress can cause poor health.
    - Invite a dentist as a guest speaker to demonstrate good dental care.
    - Show film *Good Looks/Here and Now*.
    - Divide the class into groups of similar occupational interests, and have the students develop a project depicting appropriate or ideal appearance for that occupation.

SUGGESTED ACTIVITIES

4. Use Information Sheet, Section IV, to discuss essentials of body cleanliness.
   - Emphasize how good hygiene contributes to good health.
   - Discuss hygiene in relationship to different cultures.

     EXAMPLES: In Arabic cultures where there is very little water available, people bathe in oil.

     In some Asiatic cultures, bathing for a period after childbirth is forbidden to prevent the possibility of disease.
   - Stress that people who are ill are more sensitive to odors, including perfumes, body odors, and cooking odors.
5. Use Information Sheet, Section V, to discuss elements of complexion care.
   - Discuss acne control, stressing diet and cleanliness. Talk about how difficult problem acne can be for a teenager.
   - Invite a beautician to come and discuss skin products.
6. Use Information Sheet, Section VI, to discuss essentials of well-groomed hair.
   - Have students find magazine pictures of hairstyles that they like and consider to be appropriate for allied health careers. Have students explain why those styles appeal to them.
   - Discuss hair parasites and how their spread can be controlled.
7. Use Information Sheet, Section VII, to discuss ways to achieve good posture.
   - Point out good and poor posture, either demonstrating it yourself or having students do it.
   - Have the students practice using good posture to sit and stand.
8. Use Information Sheet, Section VIII, to discuss appropriate clothing selection to maintain health.
   - Show magazine pictures of current styles of clothing, shoes, and accessories. Ask the students to point out why or why not the styles would be appropriate for a health care occupation.
   - Have a class discussion on how the selection of clothing and accessories can affect the health of the person wearing them or the health of clients.

SUGGESTED ACTIVITIES

- Have a delegate from HOSA come to class in the official uniform.
- Have a representative from a uniform shop come or send samples of the various uniforms used in health care.
- Set up a fashion show of contrasts. Some students model only clothing and accessories appropriate on the job in an allied health career. Some of the models, however, wear a clothing item or accessory that could cause health or safety problems to themselves or clients. Members of the audience must indicate whether or not each model is wearing only appropriate items. For each "wrong" item, the audience writes the name of the item and why it is inappropriate.
- Have students complete Assignment Sheet #1 to evaluate their own health and grooming habits. Stress that the assignment sheet will not receive a score.

9. Use Information Sheet, Sections IX-XV, to discuss nutritional needs.

   - Invite a nutritionist as a guest speaker.
   - Explain that obesity is a major health hazard; discuss ways it can be prevented or controlled.
   - Discuss the eating habits of today, fast foods, processed foods, frozen foods; discuss their impact on nutrition.
   - Discuss the uses and dangers of vitamin supplementation.
   - Use Supplements #3-#5 to discuss functions of nutrients, recommended daily dietary allowances, and types of diets that are prescribed for certain conditions.
   - Take the students to the cafeteria and point out the components of a well-balanced diet.
   - Discuss advertising and how it may be misleading to the consumer.
   - Personalize Section XV for your class. Use students as examples for factors that affect energy requirements.
   - Discuss nutrition in teenagers; discuss the difference in their nutritional needs and those of an adult.
   - Point out that more attention is being focused on eating disorders than ever before. Use Supplement #6 to discuss eating disorders. Ask students what they think is causing a rise in the incidence of these disorders in childhood and adolescence and what can be done to stop that rise.

SUGGESTED ACTIVITIES

- Show film *Look Before You Eat*.
- Have the students complete Assignment Sheet #2, using Supplements #4 and #5.

10. Use Information Sheet, Section XVI, to discuss the wellness concept.

- Stress that the emphasis on health care should be preventive and that the wellness concept includes prevention as a main factor.
- Point out components of a wellness program that are available in your community.
- Explain that many employers offer a wellness program to employees. As well as improving the individual's health, the company gains more healthful employees and loses less company time from illness.
- Give students Biodots to place on their hands. Discuss the meaning of the different colors. Ask students to observe their dots periodically throughout the day. Have a follow-up discussion the next day on their findings.
- Show Transparency #1 when discussing stress.
- Have students complete Supplement #7, Social Readjustment Rating Scale, to illustrate types of stress and their effects. Point out that the list is not all-inclusive—other events can also cause stress—and that each individual deals with stress differently.
- Using Supplement #8, discuss how stress affects every aspect of life. Point out that all types of stress are not negative: a little stress can be a motivator.
- Using the instructions in Supplement #9, have students practice the relaxation exercises. When they finish, ask students for their reaction to doing the exercises. Discuss the benefits of relaxation exercises and when and how they would be most helpful.
- Have the class brainstorm about what they consider to be the most important aspects of wellness. Discuss strategies to improve wellness ratings.
- Have the students develop a plan to improve their own wellness rating.
- Have the students brainstorm as to what can be done in their community to develop an interest in wellness and what programs can be offered.

11. Use Information Sheet, Sections XVII and XVIII, to discuss emotional maturity and personality improvement.

- Discuss the need to get along with others in working situations as well as social.

SUGGESTED ACTIVITIES

- Explain the self-fulfilling prophecy.

- Point out the reasons why students may want to improve their personalities.

12. Use Information Sheet, Sections XIX-XXII, to discuss defense mechanisms and mental health.

- Point out that unconsciously everyone uses defense mechanisms. Depending on the mechanisms used, this can be a healthy way to reduce stress.

- Point out some defense mechanisms that you may have used recently that the students could have observed.

- Ask the students to discuss defense mechanisms they may have used or seen used.

- Have the students complete Assignment Sheet #3 to practice identifying defense mechanisms.

- Point out that some habits may become compulsive actions in the mentally ill.

  EXAMPLES: Brushing hair exactly twenty times, chewing food exactly 20 times, counting cracks in the sidewalk, sniffing food before eating, turning out lights in an empty room

- Discuss factors in child rearing that may result in emotional or mental problems.

  EXAMPLES: Rejecting parents, parents who are too rigid or too permissive, parents who are abusive to the child or each other, chemical abuse

- Discuss ways to relieve emotional tension.

- Discuss the high rate of teenage suicide and ways it may be prevented. Never take suicidal threats lightly; someone who mentions suicide has considered it. Teenage problems may seem unimportant to an adult, but those problems may be overpowering to an adolescent.

SUGGESTED ACTIVITIES

F. Give test.

G. Reteach and retest if necessary.

H. Complete appropriate section of students' competency profiles.

III. Unit references

A. Barry, Patricia D. and A. James Morgan. *Mental Health and Mental Illness*, 3rd ed. Philadelphia: J.B. Lippincott Company, 1985.

B. *Mosby's Medical & Nursing Dictionary*, 2nd ed. St. Louis, Missouri: The C.V. Mosby Company, 1986.

C. Otto, James H., Cloyd J. Julian, and J. Edward Tether. *Modern Health*. New York: Holt, Rinehart and Winston, Publishers, 1976.

D. Simmers, Louise. *Diversified Health Occupations*. Albany, New York: Delmar Publishers Inc., 1983.

PERSONAL HEALTH
UNIT I

SUPPLEMENT #1 — CROSSWORD PUZZLE

Test your recollection of terms associated with personal health. Use the clues below to help you work the puzzle on the next page.

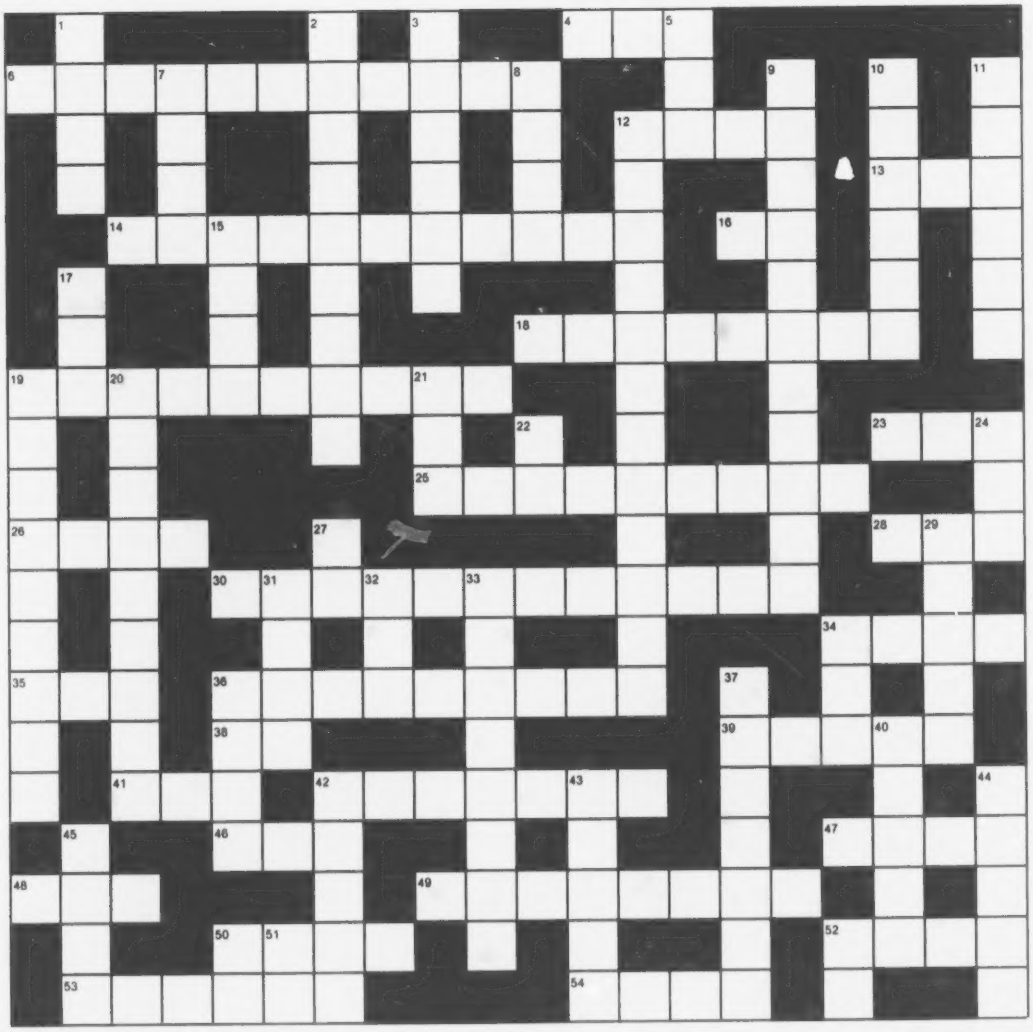
ACROSS

4. Deed
6. Total reaction of a person to his or her environment
12. Groan
13. Minimum daily nutrient need
14. Fatlike pearly substance found in animal fat
16. Negative
18. Mild mental illness
19. Illness characterized by dejection
23. Move fast
25. Result of those processes whereby body takes in and uses food for growth, development, and maintenance of health
26. Diplomacy
28. Puny
30. Part of the mind just below immediate awareness
34. Sort
35. It is (contraction)
36. Process of changing food so that it can be used by the body
38. Pronoun
39. One of the four food groups
41. Litigate; take to court
42. Feeling of worry
46. Muscle spasm
47. Résumé
48. Adipose
49. Loss of appetite
50. Lateral
52. Exercising increases muscle _______
53. Repetitious actions
54. Responsibility

DOWN

1. One of the four food groups
2. Habit peculiar to an individual
3. To weaken a solution
5. Also
7. Audible breath
8. Twelve months
9. Part of the mind closed to immediate awareness
10. Gradual decay of enamel and dentin of a tooth
11. State of complete physical, social, and mental well-being
12. Poor nourishment resulting from improper diet or a defect in metabolism
15. One time only
17. Time of Life
19. Science of use of food in health and disease
20. Severe mental illness
21. Have
22. Occupational therapy (abbr)
24. Nothing
27. Obstetrician (abbr)
29. Oily substance not soluble in water
31. Standard of measurement
32. Stick used in billiards
33. Chemical compound found in food, that is necessary for good health
34. Digit on a foot
36. Food and drink consumed each day
37. Condition of having excessive amount of fat
40. With 42 Down, chemical compounds that are components of proteins, essential for normal growth and development
42. Part of 40 Down
43. Fatigued
44. H_2O
45. Every
50. Spanish *yes*
51. Pronoun
52. ____________ and fro

SUPPLEMENT #1



SUPPLEMENT #1

	1 M					2 M		3 D			4 A	C	5 T						
6 P	E	R	7 S	O	N	A	L	I	T	8 Y			O		9 U		10 C		11 H
	A		I			N		L		E		12 M	O	A	N		A		E
	T		G			N		U		A		A			C		13 R	D	A
		14 C	H	15 O	L	E	S	T	E	R	O	L		16 N	O		I		L
	17 A			N		R		E				N			N		E		T
	G			C		I				18 N	E	U	R	O	S	I	S		H
19 D	E	20 P	R	E	S	S	I	21 O	N			T			C				
I		S				M		W		22 O		R			I		23 R	U	24 N
E		Y						25 N	U	T	R	I	T	I	O	N			I
26 T	A	C	T			27 O						T			U		28 I	29 L	L
E		H		30 S	31 U	B	32 C	O	33 N	S	C	I	O	U	S			I	
T		O			N		U		U			O				34 T	Y	P	E
35 I	T	S		36 D	I	G	E	S	T	I	O	N		37 O		O		I	
C		I		38 I	T				R					39 B	R	E	40 A	D	
S		41 S	U	E		42 A	N	X	I	E	43 T	Y		E			M		44 W
	45 E			46 T	I	C			E		I			S		47 V	I	T	A
48 F	A	T				I		49 A	N	O	R	E	X	I	A		N		T
	C			50 S	51 I	D	E		T		E			T		52 T	O	N	E
	53 H	A	B	I	T	S					54 D	U	T	Y		O			R

PERSONAL HEALTH
UNIT I

SUPPLEMENT #2 — COMMON PHOBIAS

The following list names some of the more common phobias and indicates what a person suffering from that phobia fears.

ACROPHOBIA	High places
AGORAPHOBIA	Open places
ALGOPHOBIA	Pain
ARACHNOPHOBIA	Spiders
ASTRAPHOBIA	Storms, thunder, and lightning
AVIOPHOBIA	Airplanes
CLAUSTROPHOBIA	Closed places
ERYTHROPHOBIA	Blushing
GYNEPHOBIA	Women
HEMATOPHOBIA	Blood
LALIOPHOBIA	Talking
MIYSOPHOBIA	Germs
MONOPHOBIA	Being alone
NYCTOPHOBIA	Darkness
OCHOLOPHOBIA	Crowds
PATHOPHOBIA	Disease
PYROPHOBIA	Fire
SYPHILOPHOBIA	Syphilis
XENOPHOBIA	Strangers
ZOOPHOBIA	Animal or Animals

PERSONAL HEALTH
UNIT I

SUPPLEMENT #3 — FUNCTIONS OF NUTRIENTS

CARBOHYDRATES — Provide energy

PROTEINS — Aid in tissue growth and repair

FATS — Provide stored energy to the body; protect vital organs

MINERALS — Build tissues; regulate body fluids

WATER — Aids digestive process; regulates body processes

VITAMINS:

Vitamin A — Aids growth; maintains health of eyes, structure and functioning of cells of the skin and mucous membranes

Vitamin D — Aids growth; regulates calcium and phosphorus metabolism; builds and maintains normal bones and teeth

Vitamin E — Protects fatty acids and vitamins A and C from destruction

Vitamin K — Helps normal clotting of blood

Vitamin C (Ascorbic Acid) — Maintains strength of blood vessels and health of teeth and gums; helps heal wounds

Vitamin B_1 (Thiamine) — Aids carbohydrate metabolism; maintains healthy appetite and functioning of nerves

Vitamin B_2 (Riboflavin) — Maintains health of skin, eyes, and mouth; aids carbohydrate, fat, and protein metabolism

Niacin (Nicotinic Acid) — Aids carbohydrate, fat, and protein metabolism; prevents pellagra

Vitamin B_6 (Pyridoxine) — Aids metabolism of proteins

Pantothenic Acid — Aids metabolism

Biotin — Aids metabolism

Vitamin B_{12} — Aids metabolism, maintains healthy red blood cells, used in treatment of pernicious anemia

Folacin (Folic Acid) — Maintains blood-forming system; aids metabolism

SUPPLEMENT #4 — RECOMMENDED DAILY DIETARY ALLOWANCES

8. FOOD AND NUTRITION BOARD, NATIONAL ACADEMY OF SCIENCES—NATIONAL RESEARCH COUNCIL RECOMMENDED DAILY DIETARY ALLOWANCES (RDA), [a]REVISED 1980

Designed for the maintenance of good nutrition of practically all healthy people in the U.S.A.

	Age (years)	Weight		Height		Protein (g)	Fat-Soluble Vitamins			Water-Soluble Vitamins							Minerals					
		(kg)	(lb)	(cm)	(in)		Vitamin A (μg RE)[b]	Vitamin D (μg)[c]	Vitamin E (mg α-TE)[d]	Vitamin C (mg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg NE)[e]	Vitamin B-6 (mg)	Folacin[f] (μg)	Vitamin B-12 (μg)	Calcium (mg)	Phosphorus (mg)	Magnesium (mg)	Iron (mg)	Zinc (mg)	Iodine (μg)
Infants	0.0–0.5	6	13	60	24	kg × 2.2	420	10	3	35	0.3	0.4	6	0.3	30	0.5[g]	360	240	50	10	3	40
	0.5–1.0	9	20	71	28	kg × 2.0	400	10	4	35	0.5	0.6	8	0.6	45	1.5	540	360	70	15	5	50
Children	1–3	13	29	90	35	23	400	10	5	45	0.7	0.8	9	0.9	100	2.0	800	800	150	15	10	70
	4–6	20	44	112	44	30	500	10	6	45	0.9	1.0	11	1.3	200	2.5	800	800	200	10	10	90
	7–10	28	62	132	52	34	700	10	7	45	1.2	1.4	16	1.6	300	3.0	800	800	250	10	10	120
Males	11–14	45	99	157	62	45	1000	10	8	50	1.4	1.6	18	1.8	400	3.0	1200	1200	350	18	15	150
	15–18	66	145	176	69	56	1000	10	10	60	1.4	1.7	18	2.0	400	3.0	1200	1200	400	18	15	150
	19–22	70	154	177	70	56	1000	7.5	10	60	1.5	1.7	19	2.2	400	3.0	800	800	350	10	15	150
	23–50	70	154	177	70	56	1000	5	10	60	1.4	1.6	18	2.2	400	3.0	800	800	350	10	15	150
	51 +	70	154	177	70	56	1000	5	10	60	1.2	1.4	16	2.2	400	3.0	800	800	350	10	15	150
Females	11–14	46	101	157	62	46	800	10	8	50	1.1	1.3	15	1.8	400	3.0	1200	1200	300	18	15	150
	15–18	55	120	163	64	46	800	10	8	60	1.1	1.3	14	2.0	400	3.0	1200	1200	300	18	15	150
	19–22	55	120	163	64	44	800	7.5	8	60	1.1	1.3	14	2.0	400	3.0	800	800	300	18	15	150
	23–50	55	120	163	64	44	800	5	8	60	1.0	1.2	13	2.0	400	3.0	800	800	300	18	15	150
	51 +	55	120	163	64	44	800	5	8	60	1.0	1.2	13	2.0	400	3.0	800	800	300	10	15	150
Pregnant						+ 30	+ 200	+ 5	+ 2	+ 20	+ 0.4	+ 0.3	+ 2	+ 0.6	+ 400	+ 1.0	+ 400	+ 400	+ 150	*h*	+ 5	+ 25
Lactating						+ 20	+ 400	+ 5	+ 3	+ 40	+ 0.5	+ 0.5	+ 5	+ 0.5	+ 100	+ 1.0	+ 400	+ 400	+ 150	*h*	+ 10	+ 50

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[a] The allowances are intended to provide for individual variations among most normal persons as they live in the United States under usual environmental stresses. Diets should be based on a variety of common foods in order to provide other nutrients for which human requirements have been less well defined.

[b] Retinol equivalents. 1 retinol equivalent = 1 μg retinol or 6 μg carotene.

[c] As cholecalciferol. 10 μg cholecalciferol = 400 IU of vitamin D.

[d] α-tocopherol equivalents. 1 mg *d*-α-tocopherol = 1 α-TE.

[e] 1 NE (niacin equivalent) is equal to 1 mg of niacin or 60 mg of dietary tryptophan.

[f] The folacin allowances refer to dietary sources as determined by *Lactobacillus casei* assay after treatment with enzymes (conjugases) to make polyglutamyl forms of the vitamin available to the test organism.

[g] The recommended dietary allowance for vitamin B-12 in infants is based on average concentration of the vitamin in human milk. The allowances after weaning are based on energy intake (as recommended by the American Academy of Pediatrics) and consideration of other factors, such as intestinal absorption.

[h] The increased requirement during pregnancy cannot be met by the iron content of habitual American diets nor by the existing iron stores of many women; therefore the use of 30–60 mg of supplemental iron is recommended. Iron needs during lactation are not substantially different from those of nonpregnant women, but continued supplementation of the mother for 2-3 months after parturition is advisable in order to replenish stores depleted by pregnancy.

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PERSONAL HEALTH
UNIT I

SUPPLEMENT #5 — DIETS PRESCRIBED FOR CERTAIN CONDITIONS

Diet	Foods Allowed	Foods Omitted	Conditions
Low carbohydrate	Only enough carbohydrates to maintain health and carry on activities Dietetic foods	Sugar and sugar-sweetened foods All jellies and candies Pastries and desserts Alcoholic beverages	Diabetes mellitus Hyperinsulinism (Nutritionally adequate)
Low fat	Increased carbohydrates and proteins Skim milk Sherbet Minimum amount butter Vegetables and fruits as desired	All fats limited Fried foods Pork Ice cream, pastries	Gall bladder and liver disease Obesity Heart conditions (Deficient in fat soluble vitamins)
High iron	Normal diet with high-iron foods: Liver and organ meats Red meats All dried fruits Soybeans Molasses		Nutritional anemia Pernicious anemia (Nutritionally adequate)
Low cholesterol	Lean muscle meats, fish Poultry (without skin or fat) Skim milk Margarine made of unsaturated fats Liquid vegetable oil	Organ meats Egg yolk Shellfish Desserts made with cream, whole milk Cream, butter	Atheroscle[illegible]sis Coronary c[illegible]lation disease (Nutritionally adequate)
Low calorie	Normal diet with low-calorie content	Butter, sugar, and empty-calorie foods No fried foods	Weight reduction
High calorie (4000 calories)	Emphasis on increase of calories rather than increase of nutrients Full meals with high-calorie snacks between meals	Fatty foods and bulky foods Foods patient dislikes	For persons ten percent or more below desired weight for age, height, and sex (Diet adequate in all nutrients)

SUPPLEMENT #5

Diet	Foods Allowed	Foods Omitted	Conditions
High protein (Up to 100 grams)	Added amounts of meat, milk, cheese, eggs, fish, and poultry Additional nonfat dry milk to increase protein without increasing fat	Fatty foods	Children and adolescents who need additional protein for growth Pregnancy and lactation Following surgery Illness resulting in protein loss (Nutritionally adequate)
Low protein (approximately 40 grams	One ounce daily of meat, poultry, fish, or cheese One egg daily Butter as desired Fruits and vegetables as desired One cup milk daily	More than one ounce of meat Puddings unless made with milk allowance Cream soups unless prepared with milk allowance Dried peas and beans	Kidney conditions Liver ailments Heart conditions (Nutritionally inadequate in protein, calcium, iron and all vitamins except vitamin C)
High carbohydrate	Emphasis on carbohydrate foods Full meals with high-carbohydrate snacks	Fried foods Fatty meats Pastries Alcoholic beverages Spices and condiments	Preparation for surgery Kidney disease Toxemia of pregnancy Liver disease (Nutritionally adequate)
High residue	Increased whole grain cereals Increased fruits, vegetables		Atonic constipation (Nutritionally adequate)
Bland	Generous amounts of milk and protein foods Refined cereals Simple desserts Ripe banana, applesauce, baked apple, peaches, pears Decaffeinated coffee, weak tea Carrots, beets, string beans, spinach, squash without seeds, asparagus tips, peas	Fried foods Meats with coarse fiber, tough gristle Coarse foods Highly seasoned foods Fruits and vegetables other than allowed Pastries and candies Alcoholic beverages	Gastric ulcer Spastic constipation Colitis (Nutritionally adequate if well planned

SUPPLEMENT #5

Diet	Foods Allowed	Foods Omitted	Conditions
Low residue	Refined cereals, breads Soft cheese (cottage, cream) Tender meats Pureed vegetables Applesauce, canned peaches, pears, white cherries, pureed apricots, prunes, plums, fruit juices Plain pudding, angel food cake, sponge cake	Fibrous meats Fresh fruits and vegetables Fried foods Whole grain cereals, breads Spices and condiments Pastries and candies Alcoholic beverages	Before and after intestinal surgery Severe diarrhea Colitis, diverticulitis Hemorrhoids (Deficient in vitamins)
Sodium restricted	Natural foods prepared without salt Milk, meat in limited amounts Fruits and vegetables without salt Unsalted bread Desserts prepared without salt	Processed foods Salt, many seasonings Monosodium glutamate Baking powder, baking soda Brine-prepared foods Food preservatives containing sodium Cultured buttermilk	Kidney disease Cardiovascular disorders Hypertension (Nutritionally adequate if well-planned)

PERSONAL HEALTH
UNIT I

SUPPLEMENT #6 — EATING DISORDERS

Condition	Appearance and Implications	Treatment
Obesity	Overweight Habitual overeating Overeating under pressure Major threat to health Poor exercise habits Poor self-esteem Depression, withdrawal, social isolation	Nutritional counseling for the family Weight-reduction plan Behavior modification Peer support group
Anorexia nervosa	Emaciated Life-threatening Mainly adolescent and young women affected Willful limitation of intake to become thin Obsessive preoccupation with dieting	Adequate nutrition to restore weight Supportive environment Psychotherapy
Bulimia	Cyclical food binges, followed by induced vomiting or use of laxatives	Same as for anorexia nervosa

PERSONAL HEALTH
UNIT I

SUPPLEMENT #7 — SOCIAL READJUSTMENT RATING SCALE

This scale, designed to estimate the amount of stress in a person's life over a twelve-month period, lists forty-two life changes to which a person may have been exposed. The more stress a person is exposed to, the higher the possibility of that person's becoming physically ill.

Each life change is given a number to designate its value in Life Change Units (LCUs). A person who has been exposed to a level of 300 points or above is at risk of developing a serious illness over the next two years. This does not mean that everyone with a high LCU level will develop a major illness; it just means the risk is higher.

Look at each item in Column 1 on the next page. For each life event that has occurred in your life during the past twelve months, mark the event value in Column 3. After you have completed the list, add up all the values in Column 3 for your total points.

SUPPLEMENT #7

1 **Life Event**	2 **Event Value**	3 **Your Score**
Death of spouse	100	____
Divorce	73	____
Marital separation	65	____
Jail term	63	____
Death of close family member	63	____
Personal injury or illness	53	____
Marriage	50	____
Fired at work	47	____
Marital reconciliation	45	____
Retirement	45	____
Change in health of a family member	44	____
Pregnancy	40	____
Sex difficulties	39	____
Gain of a new family member	39	____
Business readjustment	39	____
Change in financial state	39	____
Death of a close friend	37	____
Change to a different line of work	36	____
Change in number of arguments with spouse	35	____
Mortgage over $10,000	31	____
Foreclosure of mortgage or loan	30	____
Change in responsibilities at work	29	____
Son or daughter leaving home	29	____
Trouble with in-laws	29	____
Outstanding personal achievement	28	____
Spouse begins or stops work	26	____
Begin or end school	26	____
Change in living conditions	25	____
Revision of personal habits	24	____
Trouble with boss	23	____
Change in work hours or conditions	20	____
Change in residence	20	____
Change in schools	20	____
Change in recreation	19	____
Change in church activities	19	____
Change in social activities	18	____
Mortgage or loan less than $10,000	17	____
Change in sleeping habits	16	____
Change in number of family gatherings	15	____
Change in eating habits	15	____
Vacation	13	____
Christmas	12	____
Minor violations of the law	11	____
	Total	____

Reprinted with permission from *Journal of Psychosomatic Research*, Volume 11, T.H. Holmes and R.J. Rahe, "The Social Readjustment Rating Scale," Copyright 1967, Pergamon Press, Ltd.

PERSONAL HEALTH
UNIT I

SUPPLEMENT #8 — "PLAIN TALK" ABOUT STRESS

- A 19-year-old girl learns her boyfriend has been killed in an auto accident.

- A businessman loses an important business deal to his competitor.

- An athlete receives a first-place award for his efforts in a track event.

- A 15-year-old boy approaches a girl to ask her out for the first time.

What do all of these people and situations have in common? *Stress*. This may surprise you because the last two situations both involve happy events. The fact is that it doesn't matter whether the situation is pleasant or unpleasant, according to Hans Selye, M.D. What counts is the intensity of the demand it places on you to readjust. Dr. Selye, a Montreal, Canada, physician and author of several books on stress, calls these incidents "stressors."

He states that the physical reaction of the body to stress is basically the same, regardless of the stressor. Furthermore, he feels that the only complete freedom from stress is death. Humans thrive on stress because it makes life more interesting.

No matter what you are doing, you are under some amount of stress. Even while you sleep, your body must continue to function and react to the stress imposed by dreaming. Stress comes from two basic forces—the stress of physical activity and the stress of mental/emotional activity. It is interesting to note that stress from emotional frustration is more likely to produce disease, such as ulcers, than stress from physical work or exercise. In fact, physical exercise can relax you and help you deal with mental stress.

Stress or Distress

Then would it be true to assume there is no such thing as bad stress? Dr. Selye feels that there is a type of stress that can be harmful. He calls it *distress*. Distress is continual stress that causes you to constantly readjust or adapt. For example, having a job you do not like can be constantly frustrating, and frustration is "bad" stress. If this distress lasts long enough, it can result in fatigue, exhaustion, and even physical or mental breakdown. The best way to avoid it is to choose an environment that allows you to do the activities you enjoy, that are meaningful to you. Your friends, your work, and even your future mate can be sources of challenging good stress or harmful distress.

Dr. Selye also believes that the absence of work is not necessarily a way to avoid stress. An example of this is the retired person who has nothing to do. Boredom then becomes an enemy capable of causing tremendous distress. Work is actually good for you as long as you can achieve something by doing it. It will only wear you out if it becomes frustrating because of failure or a lack of purpose.

To avoid distress, you should seek work or tasks that:

a. You are capable of doing
b. You really enjoy
c. Other people appreciate

SUPPLEMENT #8

Body Reactions to Stress

Regardless of the source of stress, states Dr. Selye, your body has a three-stage reaction to it.

Stage 1—Alarm
Stage 2—Resistance
Stage 3—Exhaustion

In the *alarm stage*, your body recognizes the stressor and prepares for fight or flight. This is done by a release of hormones from the endocrine glands. These hormones will cause an increase in heartbeat and respiration, elevation in blood sugar level, increase in perspiration, dilated pupils, and slowed digestion. You will then choose whether to use this burst of energy to fight or flee.

In the *resistance stage*, your body repairs any damage caused from the stress. If, however, the stressor does not go away, the body cannot repair the damage and must remain alert.

This plunges you into the third stage—*exhaustion*. If this state continues long enough, you may develop one of the "diseases of stress," such as migraine headaches, heart irregularity, or even mental illness. Continued exposure to stress during the exhaustion stage causes the body to run out of energy, and may even stop bodily functions.

Since you cannot build a life completely free from stress or even distress, it is important that you develop some ways of dealing with stress.

Getting a Handle on Stress and Distress

Recognizing that stress has a lifelong influence on you, what can you do about handling it? Doctors have come up with a few suggestions on how to live with stress.

1. *Work off stress*—If you are angry or upset, try to blow off steam physically by activities such as running, playing tennis, or gardening. Even taking a walk can help. Physical activity allows you a "fight" outlet for mental stress.

2. *Talk out your worries*—It helps to share worries with someone you trust and respect. This may be a friend, family member, clergyman, teacher, or counselor. Sometimes another person can help you see a new side to your problem and thus, a new solution. If you find yourself becoming preoccupied with emotional problems, it might be wise to seek a professional listener, like a guidance counselor or psychologist. This is not admitting defeat. It is admitting you are an intelligent human being who knows when to ask for assistance.

3. *Learn to accept what you cannot change*—If the problem is beyond your control at this time, try your best to accept it until you can change it. It beats spinning your wheels, and getting nowhere.

4. *Avoid self-medication*—Although there are many chemicals, including alcohol, that can mask stress symptoms, they do not help you adjust to the stress itself. Many are habit-forming, so the decision to use them should belong to your doctor. It is a form of flight reaction that can cause more stress than it solves. The ability to handle stress comes from within you, not from the outside.

5. *Get enough sleep and rest*—Lack of sleep can lessen your ability to deal with stress by making you more irritable. Most people need at least seven to eight hours of sleep out of every 24. If stress repeatedly prevents you from sleeping, you should inform your doctor.

6. *Balance work and recreation*—"All work and no play can make Jack a nervous wreck." Schedule time for recreation to relax your mind. Although inactivity can cause boredom, a little loafing can ease stress. This should not be a constant escape, but occasionally, you deserve a break.

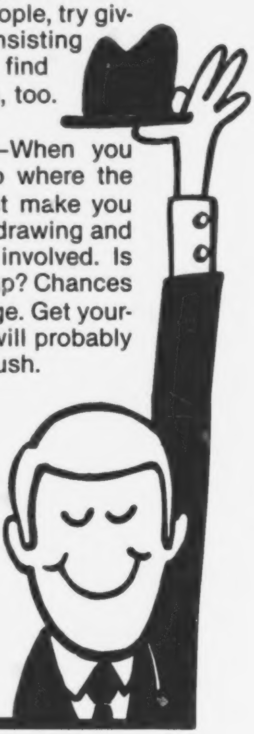
7. *Do something for others*—Sometimes when you are distressed, you concentrate too much on yourself and your situation. When this happens, it is often wise to do something else, and get your mind off of yourself. There is an extra bonus in this technique—it helps make friends.

SUPPLEMENT #8

8. *Take one thing at a time*—It is defeating to tackle all your tasks at once. Instead, set some aside and work on the most urgent.

9. *Give in once in awhile*—If you find the source of your stress is other people, try giving in instead of fighting and insisting you are always right. You may find that others will begin to give in, too.

10. *Make yourself available*—When you are bored and feel left out, go where the action is! Sitting alone will just make you more frustrated. Instead of withdrawing and feeling sorry for yourself, get involved. Is there a play or musical coming up? Chances are they will need help back stage. Get yourself back there and somebody will probably hand you a hammer or paint brush.



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Recognizing stress as an ongoing part of life may well be the first step in dealing with it. Turn stress into a positive force and let it make life more interesting.

PERSONAL HEALTH
UNIT I

SUPPLEMENT #9 — RELAXATION EXERCISES

For maximum benefit, do these relaxation exercises slowly to relieve tension and strengthen weak and overstressed muscles. You can do all of these exercises at home, you can do some in the office, and some are unobtrusive enough for you to do while sitting in an airplane.

AT HOME

Perform these exercises on a carpet.

1. Indian-Style Stretch (for detensing the upper and lower back):
   a. Sit on the floor with your legs comfortably crossed in front of you.
   b. Slowly bend forward at the waist, gently relaxing your head and shoulders into your lap. Let your arms hang down loosely.
   c. Inhale and exhale very slowly and feel the stretch in your neck, lower back, and in the backs of your thighs.
   d. Stay in this position for 30 seconds.

2. Knee to Chest (for lower-back stress):
   a. Lie flat on your back with your arms relaxed at your sides and legs straight.
   b. Grasp your right thigh behind your knee and then gently pull your knee toward your chest.
   c. Hold your knee tightly for five seconds, keeping your left leg straight.
   d. Repeat on the left side for five seconds.
   e. Grasp both legs together for an additional five seconds.
   f. Repeat each maneuver five times.

3. Streamline Stretch (for overstressed shoulders, legs, and upper and lower back):
   a. Lie on your back with your arms over your head, hands together, and your legs straight.
   b. Reach as far overhead as you can, pushing outward from the shoulders and chest. At the same time, tighten your thigh muscles and point your toes. Make your legs as long as you can.
   c. Hold this position for ten seconds while you slowly inhale.
   d. Relax and exhale.
   e. Repeat five times.

4. Trunk Rotation (for tense lower-back and trunk muscles):
   a. Lie on your back with your knees bent and feet flat on the floor.
   b. Clasp your hands behind your head and rest your elbows on the floor.
   c. Cross your left leg on top of your right leg, and using your left leg, pull your right toward the left until you feel a stretch on the outside of the right hip. Make sure your shoulders stay on the floor.
   d. Hold five seconds.
   e. Repeat five times.
   f. Repeat with the right leg crossed on top of the left.

SUPPLEMENT #9

IN THE OFFICE

You can do these stress-relieving exercises at your desk.

1. Neck Stretch (for upper back and neck stiffness):
    - a. Face forward.
    - b. Pull your head back, giving yourself a double chin.
    - c. Hold it there while you tilt your head downward about one inch.
    - d. Hold the stretch in the back of your neck for five seconds.
    - e. Repeat five times.
2. Posture Practice (for tensed-up shoulders, upper back, and trunk):
    - a. Sit in a straight-back chair with your arms resting in your lap and your feet flat on the floor. (Take off your shoes if you like.)
    - b. Keep your head up and shoulders down.
    - c. Imagine that there's a tight string connecting your shoulder blades.
    - d. Try to loosen that string by pulling your shoulder blades toward each other while you pull in your stomach muscles.
    - e. Hold for five seconds.
    - f. Repeat five times.
3. Arm Isometrics (for tense shoulders and arms):
    - a. While sitting erect, slide close to your desk and place the palms of your hands underneath your desktop.
    - b. Tighten your biceps (the large muscle of your upper arm).
    - c. Inhale and hold for the count of five.
    - d. Slowly exhale.
    - e. Relax your arms completely.
4. Forward Roll (for sore middle and lower back):
    - a. Take off your shoes.
    - b. Stand with your feet together, knees slightly bent, arms hanging at your sides, and your eyes closed.
    - c. Tuck your chin to your chest.
    - d. Exhale and bend over, rounding your spine one vertebra at a time.
    - e. Tighten your buttocks and stomach muscles, breathe in, and slowly straighten up.
5. Silent Scream (for relaxing face, head, neck, and shoulder muscles):
    - a. Find a place where you're sure to be left undisturbed for 15 seconds (the ladies'/men's room will do fine).
    - b. Open your mouth wide, shut your eyes, clench your fists tightly, and shake your head.
    - c. With all the energy left in you—but without making a sound—scream.
    - d. Continue for fifteen seconds.

    (NOTE: Fifteen seconds of this will relax you totally.)

SUPPLEMENT #9

IN TRANSIT

Being wedged behind the wheel of a car or crammed into an airplane seat can make your neck, shoulders, back, and knees stiff and sore. These de-stressers can relax muscles.

CAUTION

If you're driving, do these only when you've pulled off the road.

1. Contract-Relax Isometrics (for legs, shoulders, arms):
   a. Hold each of these exercises for five seconds, then relax.
   b. Repeat each no more than three times.
      (1) With your feet on the floor and your knees together, squeeze your thighs and legs together tightly.
      (2) Sit upright with your arms at your sides and elbows bent. Force your elbows outward into the arms of the seat.
      (3) Sit upright with your arms at your sides and your elbows bent. Make a fist and push your elbows back into the seat.
2. Forward Bend (for tired upper and lower back):
   a. Sit with your feet on the floor.
   b. Keeping your hips tightly tucked into the back of the seat, lean forward and rest your chest on your lap. Let your arms hang at your sides. Breathe through your mouth and your nose.
   c. Sit up after ten seconds.
3. Shoulder Stretches (for tense shoulders and back):
   a. Bring your shoulders up as high as you can.
   b. Hold for three seconds.
   c. Pull your shoulders down, feeling the stretch in your neck.
   d. Relax after three seconds.
   e. Repeat five times.

Courtesy Michael Marino. Copyright © 1985 by Michael Marino.
Adapted from "Stressed to Excess? Workouts to Cool You Out" by Michael Marino. *Mademoiselle*, December, 1985.

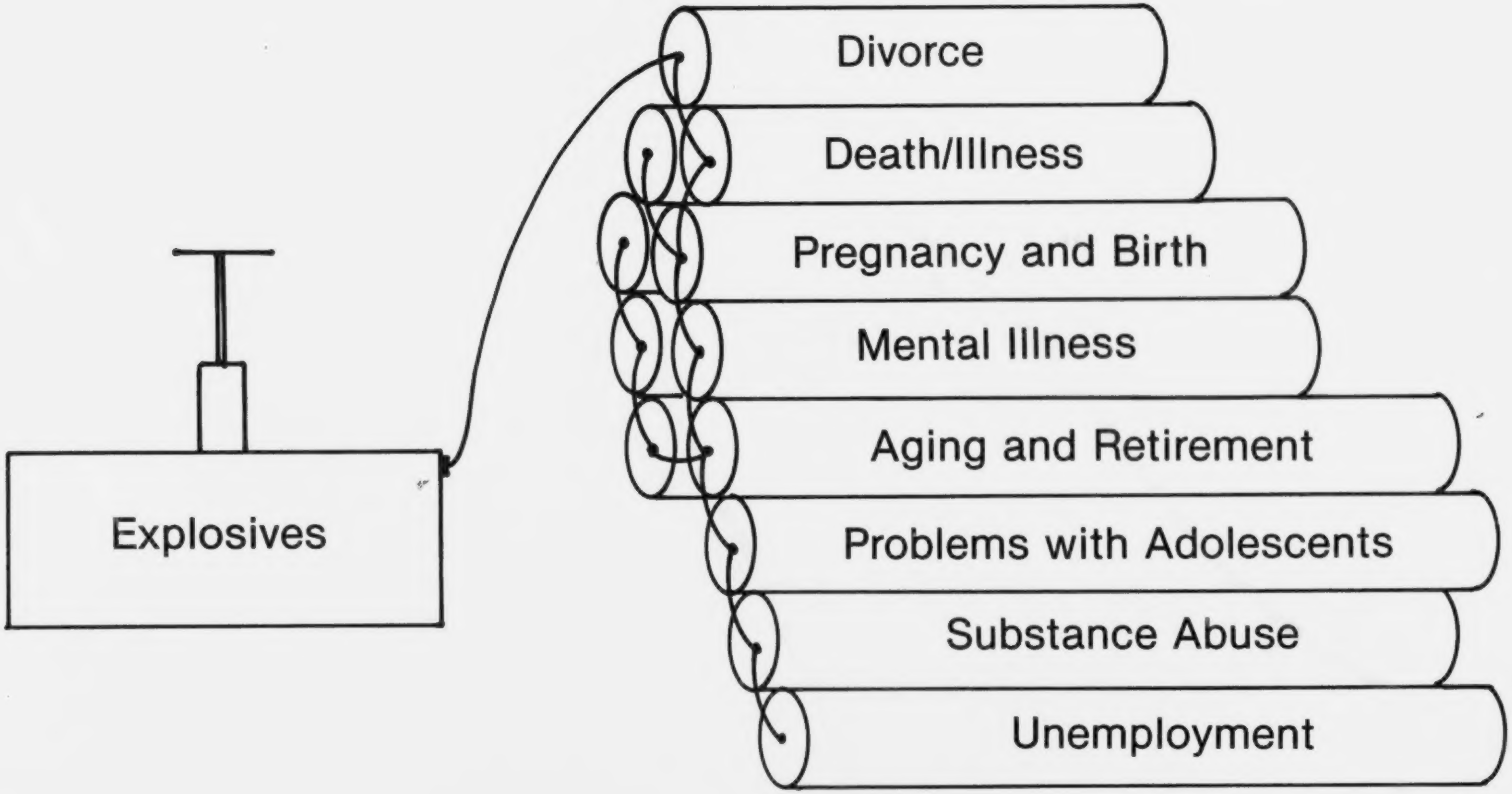
SUPPLEMENT #9

EMERGENCY RELAXER

This exercise can calm you down—and keep you feeling relaxed—in just a minute or two. Do it at the office, at home, anywhere.

1. Focus on something—a book on a shelf, for instance—at eye level on the wall. Now count slowly backward from 10 to zero, and on each count take a breath.
2. Let your eyes close, and again slowly count back from 10 to zero, taking a breath on each count.
3. Continue to breathe slowly with your eyes closed. Now, picture your breath as a mist in the shade of your favorite color. With every breath, imagine that you are surrounded more and more by a cloud of this color.
4. Float in this cloud until your eyes open naturally. Each week try to add an extra count of 10: count back from 20 to zero, then 30 to zero. Even if you build up to 60, you will still be spending only two or three minutes on the exercise.

Family Crises



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PERSONAL HEALTH
UNIT I

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1 should not be evaluated by the instructor

Assignment Sheet #2 — Evaluated to the satisfaction of the instructor

Assignment Sheet #3

PART I

A. Displacement
B. Compensation
C. Rationalization
D. Projection
E. Sublimation
F. Conversion
G. Identification

PART II — Answers should include the following

Regression; Lynne; sucking her thumb
Projection; Lynne; saying her grades are poor because her teacher does not like girls
Compensation; Lynne; developing her artistic skills instead of competing with her brother in grades and sports
Denial; Gary's friend; not accepting the amputation of his leg
Sublimation; Jim; mowing the lawn to work off his anger or disappointment at not getting the job
Rationalization; Jim; saying he did not want to move and he liked his present job
Identification; Mary; crying about a soap opera
Displacement; Jim; slamming doors because he had to cancel a golf game
Rationalization; Gary; saying he had too much homework to help with the house cleaning
Conversion; Mary; getting sick every year at the time of the state livestock competitions
Repression; Mary; being afraid of large animals but not remembering being stepped on by a calf

PART III — Evaluated to the satisfaction of the instructor

PERSONAL HEALTH
UNIT I

TEST

NAME ________________________________ SCORE ______________

1. Match to their correct definitions terms associated with personal health. Write the correct number in the blanks. Definitions continue on the next page.

_____a. Irrational fear

_____b. Way an individual acts or performs

_____c. State of complete physical, mental, and social well-being, not merely the absence of disease or infirmity

_____d. Total reaction of a person to his/her environment; traits, characteristics, and modes of behavior that make us individuals

_____e. Mental state characterized by dejection, lack of hope, sadness

_____f. Feeling of worry or uneasiness about what might happen

_____g. A feeling with resulting mental and physical states

_____h. Mental disorder in which the person is totally out of touch with reality, cannot function normally, and has a deranged personality

_____i. Habit peculiar to an individual; an exaggeration of speech or behavior

_____j. The part of the mind we are aware of; the here and now

_____k. Unconscious mental process by which we reduce anxiety with a situation or internal conflict

_____l. Mental disposition toward a person, group, thing, or situation

_____m. The part of the mind just below immediate awareness; stores memories that can be recalled at will

1. Behavior
2. Neurosis
3. Anxiety
4. Attitude
5. Unconscious mind
6. Health
7. Phobia
8. Emotion
9. Psychosis
10. Conscious mind
11. Defense mechanism
12. Depression
13. Subconscious mind
14. Personality
15. Mannerism
16. Conscience

TEST

______n. Knowledge or feeling of right and wrong with a compulsion to do right

______o. Mild form of mental illness in which a person is in contact with reality but may have anxiety, fear, apprehension, depression, or panic in response to stressful environmental conditions

______p. The part of the mind that is closed to immediate awareness; stores memories that cannot be recalled at will

2. Name three characteristics that indicate good health.

   a. ______________________________

   b. ______________________________

   c. ______________________________

3. List six factors that influence health and appearance.

   a. ______________________________

   b. ______________________________

   c. ______________________________

   d. ______________________________

   e. ______________________________

   f. ______________________________

4. Select from the following list essentials of body cleanliness. Write an "X" in the blank before each correct answer.

   ______a. Weekly bath or shower

   ______b. Clean, neatly trimmed or filed fingernails

   ______c. Clean hair

   ______d. Regular dental care

   ______e. Hair styled in beauty shop twice a week

   ______f. Daily change of underwear

   ______g. Daily use of a deodorant or antiperspirant

   ______h. Use of strong colognes, aftershaves, or body powders

TEST

5. List three elements of complexion care.

a. ______________________________

b. ______________________________

c. ______________________________

6. Select from the following list essentials of well-groomed hair. Write an "X" in the blank before each correct answer.

_____a. Daily use of hair spray

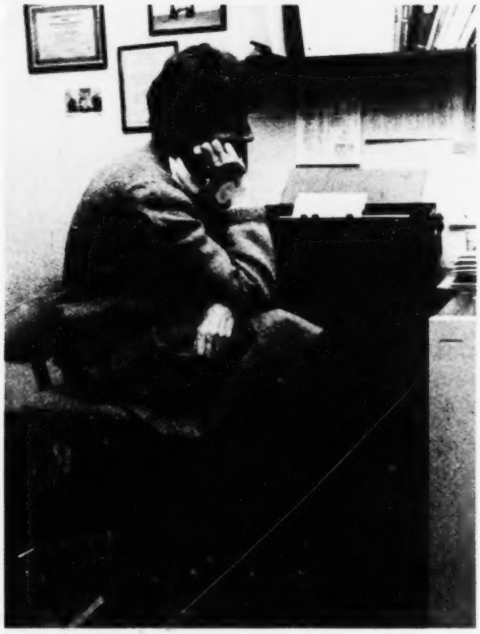
_____b. Equipment cleaned yearly

_____c. Clean hair

_____d. Clean scalp

_____e. Appropriate, easy-care hairstyle

7. Identify and describe good and poor posture. In the blanks beneath each photograph, write "Good" or "Poor" and explain how the person pictured exhibits good or poor posture.



a. ______________________________

____

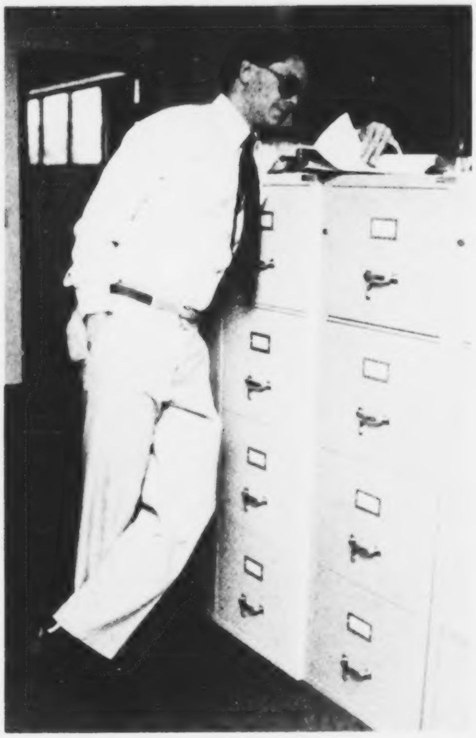
____

____

____

____

TEST



b. ______________________________

8. List three aspects of clothing and accessory selection to maintain health.

a. ______________________________

b. ______________________________

c. ______________________________

TEST

9. Match terms associated with nutrition to their correct definitions. Write the correct numbers in the blanks.

______a. Oily substance not soluble in water

______b. Result of those processes whereby the body takes in and uses food for growth, development, and maintenance of health

______c. Food and drink consumed each day

______d. Poor nourishment resulting from improper diet or a defect in metabolism

______e. Chemical substance found in food that is necessary for good health

______f. Lack or loss of appetite for food

______g. Chemical compounds that are components of proteins, essential for normal growth and development

______h. Eating disorder characterized by episodes of continuous eating followed by periods of depression and self-deprivation

______i. Substance that the body uses to yield heat and energy, promote growth, regulate body processes, and repair tissue

______j. Fatlike, pearly substance found in animal fats, oils, bile, blood, brain tissue, milk, egg yolk, nerve fibers, liver, kidneys, and adrenal glands

______k. Normal constituent of gastric juices produced by glands in the stomach

______l. Process of changing food in the mouth, stomach, and intestines so that it can be absorbed by the blood and used by the cells

______m. Science of the use of foods in health and disease

______n. Modifications in the normal diet to meet requirements created by disease or injury

______o. Condition in which there is an excessive amount of fat in the body

______p. Gradual decay of enamel and dentin of a tooth

1. Anorexia
2. Cholesterol
3. Lipid
4. Nutrition
5. Amino acids
6. Malnutrition
7. Hydrochloric acid
8. Dental caries
9. Nutrient
10. Obesity
11. Digestion
12. Diet therapy
13. Food
14. Diet
15. Dietetics
16. Bulimia

TEST

10. Name the functions of foods.

a. ____

b. ____

c. ____

d. ____

11. Name four reasons why good nutrition is essential.

a. ____

b. ____

c. ____

d. ____

12. Select from the following list factors that influence food habits. Write an "X" in the blank before each correct answer.

______a. Living alone

______b. Income

______c. Age

______d. Personal attitudes

______e. Culture and race

______f. Religion

______g. Weather

______h. Region and availability of food

______i. Libido

______j. Media

______k. Activity

______l. Pregnancy and lactation

______m. Food habits of friends and family members

TEST

13. Name the basic nutrients.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

e. ______________________________

f. ______________________________

14. Name the four basic food groups and the suggested daily servings of each.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

15. Select from the following list factors that affect energy requirements. Write an "X" in the blank before each correct answer.

_____a. Medications

_____b. Religion

_____c. Nutrition

_____d. Nationality and race

_____e. Emotions

_____f. Sex

_____g. Marital status

_____h. Size

_____i. Sleep

_____j. Body temperature

_____k. Income

TEST

_____l. Age

_____m. Physical activity

_____n. Pregnancy

_____o. Endocrine secretions

_____p. External climate

16. Name three factors included in the wellness concept.

 a. ______________________________

 b. ______________________________

 c. ______________________________

17. Name four characteristics of an emotionally mature person.

 a. ______________________________

 b. ______________________________

 c. ______________________________

 d. ______________________________

18. Arrange in order the steps to improve personality. Write a "1" in the blank before the first step, a "2" before the second step, and so on.

_____a. Have a desire to improve

_____b. Follow through with your plan

_____c. Recognize the need for improvement

_____d. Develop a plan for improvement

_____e. Evaluate strong and weak points

19. Match the defense mechanisms to their correct definitions. Write the correct numbers in the blanks.

_____a. Changing emotional conflicts into physical symptoms

 1. Conversion
 2. Displacement
 3. Projection
 4. Sublimation

TEST

______b. Justifying behavior by finding a logical motive for what we want to do

    1. Denial
    2. Projection
    3. Rationalization
    4. Repression

______c. Retreating to a former level of behavior

    1. Conversion
    2. Immature
    3. Regression
    4. Repression

______d. Blaming others for our own mistakes and shortcomings

    1. Displacement
    2. Identification
    3. Projection
    4. Sublimation

______e. Pushing threatening or painful thoughts into the unconscious mind

    1. Compensation
    2. Denial
    3. Regression
    4. Repression

______f. Evading disagreeable realities by ignoring them

    1. Conversion
    2. Denial
    3. Displacement
    4. Projection

TEST

_____g. Tranferring feelings about a person or thing to another, safer object

1. Compensation
2. Conversion
3. Displacement
4. Projection

_____h. Developing a desirable trait to counterbalance a weak or undesirable one

1. Compensation
2. Rationalization
3. Repression
4. Sublimation

_____i. Taking on the thoughts or feelings of another person as if they were your own

1. Compensation
2. Identification
3. Rationalization
4. Sublimation

_____j. Redirecting a negative drive into a constructive activity

1. Compensation
2. Denial
3. Projection
4. Sublimation

20. Distinguish between "normal" and "abnormal" behavior. Write an "N" in each blank before normal behavior and an "A" in each blank before abnormal behavior.

_____a. Can no longer live with themselves or with others

_____b. Pursue goals; feel that life has purpose

_____c. Face minor crises with a minimum of emotional turmoil and frustration

_____d. Feel controlled by the environment

TEST

______e. Lose purpose and pleasure in living

______f. Adapt behavior to other people and adjust easily to new situations

______g. Solve problems by working out compromises

______h. Cannot adjust to other people

21. Select from the following list causes of mental illness. Write an "X" in the blanks before each correct answer.

______a. Poverty

______b. Hereditary traits

______c. Malnutrition

______d. Tension

______e. Emotional conflicts

______f. Stress

22. List ways to prevent an emotional problem.

a. ____

b. ____

c. ____

(NOTE: Test item 23 lists an assignment sheet. It is an important part of the test. If it has not been completed, check with your instructor.)

23. Select foods that meet minimal nutritional needs.

PERSONAL HEALTH
UNIT I

ANSWERS TO TEST

1. a. 7
   b. 1
   c. 6
   d. 14
   e. 12
   f. 3
   g. 8
   h. 9
   i. 15
   j. 10
   k. 11
   l. 4
   m. 13
   n. 16
   o. 2
   p. 5

2. Answer should include any three of the following

   a. Clear, smooth skin
   b. Bright, clear eyes
   c. Good body posture
   d. Cheerful disposition
   e. Clean, shining hair

3. Answer should include any six of the following

   a. Cleanliness
   b. Food
   c. Elimination
   d. Exercise
   e. Sleep and rest
   f. Posture
   g. Dental care
   h. Climate
   i. Dress
   j. Habits
   k. Hobbies/recreation

4. b, c, d, f, g

5. Answer should include any three of the following

   a. Proper facial cleansing upon arising and before going to bed
   b. Proper diet
   c. Regular elimination
   d. Plenty of sleep and rest
   e. Exercise and stimulation

ANSWERS TO TEST

6. c, d, e

7. a. Poor—shoulders not erect, chest not held high, head not held erect, both feet not on floor
   b. Poor—shoulders not held erect, head not held erect, abdomen not pulled in, body weight not distributed on both feet, both feet not placed flat on floor

8. Answer should include any three of the following

   a. Properly fitted clothing
   b. Clothing fabric and weight appropriate for season or work climate
   c. Properly fitted shoes that give some support and have cushioned soles
   d. Hose that do not hinder circulation
   e. Jewelry that can be cleaned well but cannot damage your own or clients' skin, cannot get caught in equipment, and cannot be pulled by children, animals, or frightened people

9. a. 3
   b. 4
   c. 14
   d. 6
   e. 9
   f. 1
   g. 5
   h. 16
   i. 13
   j. 2
   k. 7
   l. 11
   m. 15
   n. 12
   o. 10
   p. 8

10. a. Provide heat
    b. Promote growth
    c. Repair tissues
    d. Regulate body processes

11. Answer should include any four of the following

    a. Promotes healthier body and mind
    b. Provides greater personal energy and vitality
    c. Promotes resistance to illness
    d. Speeds healing
    e. Produces stronger bones and muscles
    f. Promotes good posture
    g. Helps individual feel and sleep better

12. a, b, c, d, e, f, h, j, k, l, m

ANSWERS TO TEST

13. a. Proteins
    b. Carbohydrates
    c. Fats
    d. Minerals
    e. Vitamins
    f. Water

14. a. Milk and dairy—Two servings
    b. Meat—Two or more servings
    c. Bread and cereal—Four or more servings
    d. Fruit and vegetable—Four or more servings, including one citrus fruit

15. a, c, e, f, h, i, j, l, m, n, o, p

16. Answer should include any three of the following

    a. Diet
    b. Exercise
    c. Prevention of disease
    d. Stress management
    e. Emotional health

17. Answer should include any four of the following

    a. Is considerate of others
    b. Channels emotional drives into constructive activity
    c. Accepts disappointments without severe distress
    d. Is willing to wait for rewards or work for them
    e. Adjusts to other people and new situations

18. a. 2
    b. 5
    c. 1
    d. 4
    e. 3

19. a. 1
    b. 3
    c. 3
    d. 3
    e. 4
    f. 2
    g. 3
    h. 1
    i. 2
    j. 4

ANSWERS TO TEST

20. a. A
    b. N
    c. N
    d. A
    e. A
    f. N
    g. N
    h. A

21. b, d, e, f

22. a. Talk it out
    b. Think it out
    c. Work it off

23. Evaluated to the satisfaction of the instructor

THE LIFE STAGES
UNIT II

SUGGESTED ACTIVITIES

I. Unit contents

- A. Objective sheet
- B. Suggested activities
- C. Supplements
    1. Supplement #1 — Crossword Puzzle
    2. Supplement #2 — Living Will
    3. Supplement #3 — Directive to Physicians
- D. Transparency masters
    1. TM #1 — Maslow's Hierarchy of Human Needs
    2. TM #2 — Life Sustenance
    3. TM #3 — Physical Safety
    4. TM #4 — Love
    5. TM #5 — Esteem; Respect
    6. TM #6 — Self-Realization
- E. Information sheet
- F. Assignments sheets
    1. Assignment Sheet #1 — Identify Growth Characteristics and Stages of Personality Development
    2. Assignment Sheet #2 — Evaluate Feelings About Death
- G. Answers to assignment sheets
- H. Test
- I. Answers to test

SUGGESTED ACTIVITIES

II. Instructor's guide

A. Obtain materials to supplement unit.

1. Films

   a. *The Magic Moth*, 22 minutes, 1976. Available from Centron Educational Films, Box 687, 1621 West 9th Street, Lawrence, Kansas 66044. This film is about a family of two parents and five children. The focus is on six-year-old Mark, who voices many important questions about the death of his sister.

   b. *Peege*, 28 minutes, 1974. Available from BFA Educational Media, 468 Park Avenue South, New York, New York 10016. A grandson tries to relate to his senile grandmother, who lives in a nursing home. He recalls her former vitality, and mourns for what she has become. This film deals in a sensitive manner with the aging process and its effect on other family members.

2. Pamphlets

   a. "Children and Death," 1981.

   b. "Questions and Answers on Anatomical Gifts," 1981.

   c. "Yes! Go to the Funeral: Some Suggestions on What to Do and Say," 1981.

   (NOTE: Pamphlets *a, b,* and *c* are available from National Funeral Directors Association, Inc., 11121 West Oklahoma Avenue, Milwaukee, Wisconsin 53227.)

   d. No. 542, "A Death in the Family" by Elizabeth Ogg, 1982.

   e. No. 485, "The Dying Person and the Family" by Nancy Doyle, 1982

   (NOTE: Pamphlets *d* and *e* are available from Public Affairs Pamphlets, 381 Park Avenue South, New York, New York 10016.)

B. Introduce unit.

- Discuss general concepts of human growth and development.
- Explain factors that may interfere with normal physical growth and development, e.g., illness, genetic disorders, malnutrition, etc.
- Stress that with physical growth, there should also be psychological growth.
- Briefly discuss the field of psychology and what role it plays in our society.

SUGGESTED ACTIVITIES

C. Provide students with objective sheet.

D. Discuss unit and specific objectives.

E. Provide students with information and assignment sheets.

1. Use Information Sheet, Section I, to discuss terms and definitions associated with the life stages.

    - Differentiate between growth and development.
    - Give examples of different age groups and point out the characteristics of them. Have the students give examples from their own experiences.
    - Help the students have a realistic view of death. Be sensitive in your approach; a student may have had a recent experience with death, and others will be uncomfortable with the subject.
    - Have a general discussion on death. Have the students discuss how they feel about it, and allow them to discuss personal experiences if they feel like it.
    - Discuss the concept that a person starts to die at the moment of birth.
    - Point out that death is generally separated from family life. Generations ago, death from an illness frequently occurred at home, where the dying person was surrounded by family and friends; today death from an illness usually occurs in a hospital or nursing home. Discuss the concept of hospice as an alternative to dying in a hospital or nursing home.
    - Discuss common euphemisms for death. Many people cannot bring themselves to say the word *died* and use some other words or phrases.

      EXAMPLES: "Uncle Charlie *passed on*."

      "He *succumbed*."

      "We *lost* Uncle Charlie."

    - Have the students discuss how they feel about the death of a child or person their own age versus the death of an elderly person.

2. Use Information Sheet, Section II, to discuss major contributions of Freud, Erikson, and Maslow.

    - Discuss the similarities and differences of Freud's and Erikson's theories of personality development.

SUGGESTED ACTIVITIES

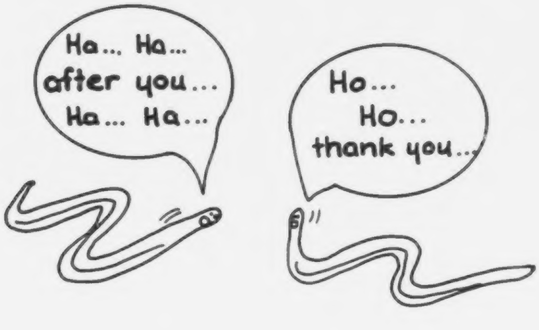
- Stress that psychological health can be as important as physical health, and that one will impact on the other.
- Briefly describe humanistic psychology.
- Have students complete Assignment Sheet #1 to identify growth characteristics and stages of personality development.
- Invite a guest speaker to discuss psychological testing and psychological development. Suggest that the speaker bring along an ink blot card.

3. Use Information Sheet, Section III, to discuss Maslow's hierarchy of human needs.

    - Show Transparencies #1-#6.
    - Give the students examples of the levels of needs. Show them that if people are hungry or cold, they do not care about status and recognition.
    - Explain that during a person's lifetime the levels of needs will fluctuate, and that only a small percentage achieve the self-actualization stage for any length of time.
    - Ask students to decide what level of needs they are in at the present time.
    - Ask students whether they agree with Richard A. Kalish about an additional level: stimulation needs, which would be between physiological needs and safety needs. Kalish says this level includes the need to explore and manipulate the environment and the needs for activity, novelty, and sex.
    - Ask students for suggestions of mnemonic devices to help them remember the levels in Maslow's hierarchy of human needs.

      EXAMPLE: *S*mall *e*els *l*augh *s*lowly, *p*olitely.

      (NOTE: This device is in reverse order: **s**elf-actualization needs, **e**steem needs, **l**ove and belonging needs, **s**afety needs, **p**hysiological needs.)


Ha... Ha... after you... Ha... Ha...
Ho... Ho... thank you...

SUGGESTED ACTIVITIES

4. Use Information Sheet, Section IV, to discuss the physiologic changes of aging.

   - Discuss current trends and facts concerning the elderly.

     EXAMPLES: The major impact in the health care delivery system of the twentieth century will be geriatrics.
     The elderly population has a high suicide rate.
     Two million people will reach age 65 annually in the United States.
     The fastest growing section of the population is 80 years and older.
     Five percent of the elderly are in institutions.
     The elderly are the major consumers of drugs.

   - Show film *Peege*.

5. Use Information Sheet, Sections V and VI to discuss terms associated with death and dying and stages in dealing with the reality of death.

   - Point out that burial, cremation, and entombment are all common means of *body disposition*.

   - Discuss cryonics as an alternative to death and burial, cremation, or entombment. Point out that some people think that freezing a body at the point of imminent death can postpone that death. They think that if a cure is eventually found for the disease causing the death, then the body can be revived and the person cured of that disease. Ask the class questions about such a possibility.

     EXAMPLES: How long could a body be in a state of suspended animation before a cure could be found?

     What happens if the technology breaks down before that cure is found? (What if the electricity goes off?)

     What is the legal status of the patient's spouse, children?

     How would insurance companies view this use of cryonics?

     What if a cure is found and the body revived? Would the person be comfortable in a future society?

   - Invite a group of people who deal with terminally ill people to discuss the stages of dying and ways to relate to dying people.

   - Explain the hospice program, and how it can help terminally ill people to deal with their own deaths.

   - Stress that the mourning process is a natural mechanism to deal with death.

SUGGESTED ACTIVITIES

- Try to relate all the sections dealing with death and dying to the students' own feelings about death. Mention that you cannot deal with another's death before coming to terms with your own mortality.

- Discuss euthanasia.

- Discuss Supplement #2, Living Will, and Supplement #3, the Directive to Physicians portion of the Oklahoma Natural Death Act (passed October, 1985). Point out that 35 states, plus the District of Columbia, have passed a natural death act. Each act contains its own directive to physicians.

  (NOTE: The directive to physicians for other states that have a natural death act may be obtained by writing Concern for Dying, 250 West 57th Street, New York, New York 10107 [212] 246-6962.)

- Discuss the contributions of Elisabeth Kubler-Ross to the recognition of stages of death and dying and to the hospice movement. You may want to assign readings or a report on one of Kubler-Ross's books such as *On Death and Dying, Questions and Answers on Death and Dying, Living with Death and Dying,* or *Death: The Final Stage of Growth.*

6. Use Information Sheet, Section VII, to discuss common reactions to death.

   - Relate the reactions to death as being similar to those felt with any loss, but reactions to death are of a much greater magnitude.

   - Have the students complete Assignment Sheet #2 to help the students understand their own emotions related to death as a preparation for helping others cope with death.

7. Use Information Sheet, Section VIII, to discuss the stages of mourning.

   - Give examples of how people might react during each stage.

   - Explain that the stages of mourning help us to deal with a loved one's death, and that going through the stages is a healthy process.

   - Invite a funeral director to be a guest speaker.

8. Use Information Sheet, Sections IX-XI, to discuss guidelines for handling grief.

   - Ask students questions to stimulate their thinking about the role of grief in coming to terms with death.

     EXAMPLES: For whom do people grieve—do they grieve for the deceased or themselves?

     Whom does a dying person grieve for?

     Why is it important for people to grieve?

     In what ways does the grief process vary with different people?

SUGGESTED ACTIVITIES

- Show film *The Magic Moth*.
- Stress to the students that the bereaved are greatly comforted if they know that someone cares and is there in case of need.
- Stress that the bereaved need support, but many people will turn away because they do not know what to say, or are uncomfortable with the situation.
- Suggest that students ask someone they know who has completed the mourning process, to share information about the comfort of knowing friends care.
- Use pamphlet "Yes, Go to the Funeral."
- Have students complete Supplement #1 to reinforce unit contents.

9. Review unit with students.
    - Ask students what mnemonic device they use to recall the levels in Maslow's hierarchy of needs. Use the device to list the levels.
    - Have students complete Supplement #1, the crossword puzzle, to reinforce the unit contents.

F. Give test.

G. Reteach and retest if necessary.

H. Complete appropriate section of students' competency profiles.

III. Unit references

A. Barry, Patricia D. and A. James Morgan. *Mental Health and Mental Illness*, 3rd ed. Philadelphia: J.B. Lippincott Company, 1985.

B. Hood, Gail Harkness and Judith R. Dincher. *Total Patient Care: Foundations & Practice, 6th ed. St. Louis, Missouri: The C.V. Mosby Company, 1984.*

C. Kates, Donna. Marriage and Family Life. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1985.

D. Rogers, Helen V. *Practical Nursing: Volume II*, rev. by Jamee Reid-Sloan. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1983.

THE LIFE STAGES
UNIT II

SUPPLEMENT #1 — CROSSWORD PUZZLE

Find out how well you recall terms associated with the life stages by working the crossword puzzle. Use the following clues to fill in the puzzle on the next page.

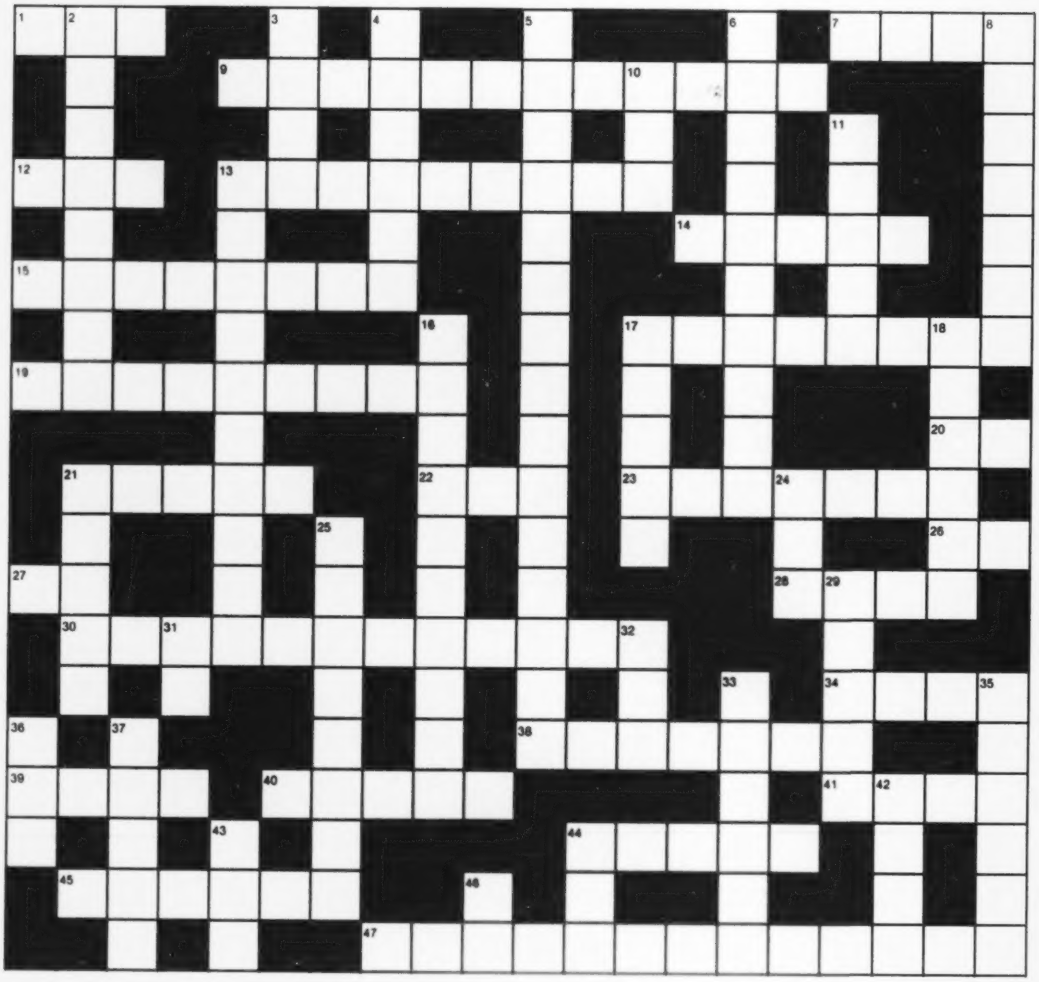
ACROSS

1. Self
7. Applaud
9. Playing beside other children but not with them (2 wds)
12. Total
13. Baby teeth are called ____________ teeth
14. Founder of psychoanalysis
15. Developmental task for school age
17. State of being self-governing
19. Process of teething
20. South Dakota (abbr)
21. Sense of having done something wrong
22. Golf peg
23. Ceremony for the dead; body is present
26. Oklahoma (abbr)
27. Rhode Island (abbr)
28. Expand
30. Study of adolescence
34. Not new
38. His theory on personality development uses developmental tasks
39. Percussion instrument
40. One of the physiological needs
41. Not up
44. Second stage in dealing with the reality of one's own death
45. Second level in the hierarchy of needs
47. Erikson's ____________ tasks

DOWN

2. Providing for discipline and learning experiences
3. Tend
4. Group of related people
5. Ceremony for the dead; body is not present (2 wds)
6. Process of coming to full development
8. Period at which biological changes reach a climax
10. Infected drainage
11. To feel or express sorrow after a loss
13. Training, self-control
16. Energy or aptitude to begin an action
17. In the air
18. Developed the hierarchy of human needs
21. Emotional reaction that follows the loss of something
24. Ova
25. Notice of someone's death
29. Circular
31. Masculine pronoun
32. To glide over snow
33. These needs include status and recognition
35. First stage in dealing with the reality of one's own death
36. Fuss
37. Hierarchy of ____________ needs
42. Abbreviation for obituary
43. Snakelike fish
44. To suffer ill health
46. Recreational vehicle (abbr)

SUPPLEMENT #1



SUPPLEMENT #1

1 E	2 G	O			3 C		4 F			5 M				6 M		7 C	L	A	8 P
	U			9 P	A	R	A	L	L	E	L	10 P	L	A	Y				U
	I				R		M			M		U		T		11 M			B
12 A	D	D		13 D	E	C	I	D	U	O	U	S		U		O			E
	A			I			L			R			14 F	R	E	U	D		R
15 I	N	D	U	S	T	R	Y			I				A		R			T
	C			C				16 I		A		17 A	U	T	O	N	O	18 M	Y
19 D	E	N	T	I	T	I	O	N		L		L		I				A	
				P				I		S		O		O				20 S	D
	21 G	U	I	L	T			22 T	E	E		23 F	U	N	24 E	R	A	L	
	R			I		25 O		I		R		T			G			26 O	K
27 R	I			N		B		A		V					28 G	29 R	O	W	
	30 E	P	31 H	E	B	I	A	T	R	I	C	32 S				O			
	F		E			T		I		C		K		33 E		34 U	S	E	35 D
36 A		37 H				U		V		38 E	R	I	K	S	O	N			E
39 D	R	U	M		40 W	A	T	E	R					T		41 D	42 O	W	N
O		M		43 E		R					44 A	N	G	E	R		B		I
	45 S	A	F	E	T	Y			46 R		I			E			I		A
		N		L			47 D	E	V	E	L	O	P	M	E	N	T	A	L

THE LIFE STAGES
UNIT II

SUPPLEMENT #2 — LIVING WILL

To My Family, My Physician, My Lawyer and All Others Whom It May Concern

Death is as much a reality as birth, growth, maturity and old age—it is the one certainty of life. If the time comes when I can no longer take part in decisions for my own future, let this statement stand as an expression of my wishes and directions, while I am still of sound mind.

If at such a time the situation should arise in which there is no reasonable expectation of my recovery from extreme physical or mental disability, I direct that I be allowed to die and not be kept alive by medications, artificial means or "heroic measures." I do, however, ask that medication be mercifully administered to me to alleviate suffering even though this may shorten my remaining life.

This statement is made after careful consideration and is in accordance with my strong convictions and beliefs. I want the wishes and directions here expressed carried out to the extent permitted by law. Insofar as they are not legally enforceable, I hope that those to whom this Will is addressed will regard themselves as morally bound by these provisions.

(Optional specific provisions to be made in this space—see other side)

Optional proxy statement: I hereby designate ______________________________ to make treatment decisions for me in the event I am comatose or otherwise unable to make such decisions for myself.

Optional Notarization:

"Sworn and subscribed to

before me this ________ day

of _____________, 19_____."

____
Notary Public
(seal)

Signed_______________________________

Date_______________________________

Witness_______________________________

Witness_______________________________

Copies of this request have been given to ______________________________

______________________________ ______________________________

(Optional) My Living Will is registered with Concern for Dying (No. ________)

Distributed by Concern for Dying, 250 West 57th Street, New York, NY 10107 (212) 246-6962

SUPPLEMENT #2

TO MAKE BEST USE OF YOUR LIVING WILL

You may wish to add specific statements to the Living Will *in the space provided for that purpose above your signature*. Possible additional provisions are:

1. "Measures of artificial life-support in the face of impending death that I specifically refuse are:
   a) Electrical or mechanical resuscitation of my heart when it has stopped beating.
   b) Nasogastric tube feeding when I am paralyzed or unable to take nourishment by mouth.
   c) Mechanical respiration when I am no longer able to sustain my own breathing.
   d) ____"
2. "I would like to live out my last days at home rather than in a hospital if it does not jeopardize the chance of my recovery to a meaningful and sentient life or does not impose an undue burden on my family."
3. "If any of my tissues are sound and would be of value as transplants to other people, I freely give my permission for such donation."

If you choose more than one proxy for decision-making on your behalf, please give order of priority (1, 2, 3, etc.)

Space is provided at the bottom of the Living Will for notarization should you choose to have your Living Will witnessed by a Notary Public.

REMEMBER...

- Sign and date your Living Will. Your two witnesses, who should not be blood relatives or beneficiaries of your property will, should also sign the spaces provided.

- Discuss your Living Will with your doctors; if they agree with you, give them copies of your signed Living Will document for them to add to your medical file.

- Give copies of your signed Living Will to anyone who may be making decisions for you if you are unable to make them yourself.

- Look over your Living Will once a year, redate it and initial the new date to make it clear that your wishes have not changed.

THE LIFE STAGES
UNIT II

SUPPLEMENT #3 — DIRECTIVE TO PHYSICIAN

STATE OF OKLAHOMA

DIRECTIVE TO PHYSICIANS

Directive made this __________ day of ____________________ (month, year).

I, ____________________________________ being of sound mind and twenty-one (21) years of age or older, willfully and voluntarily make known my desire that my life shall not be artificially prolonged under the circumstances set forth below, and do hereby declare:

1. If at any time I should have an incurable irreversible condition caused by injury, disease, or illness certified to be a terminal condition by two physicians, I direct that life-sustaining procedures be withheld or withdrawn and that I be permitted to die naturally, if the application of life-sustaining procedures would serve only to artificially prolong the moment of my death and my attending physician determines that my death is imminent whether or not life-sustaining procedures are utilized;

2. In the absence of my ability to give directions regarding the use of such life-sustaining procedures, it is my intention that this directive shall be honored by my family and physicians as the final expression of my legal right to refuse medical or surgical treatment and accept the consequences of such refusal;

3. If I have been diagnosed as pregnant and that diagnosis is known to my physician, this directive shall have no force or effect during the course of my pregnancy;

4. I have been diagnosed and notified as having a terminal condition by ____________________________________, M.D. or D.O., whose address is ______________________________, ______________________________. I understand that if I have not filled in the name and address of the physician, it shall be presumed that I did not have a terminal condition when I made out this directive;

5. This directive shall be in effect until it is revoked;

6. I understand the full import of this directive and I am emotionally and mentally competent to make this directive; and

7. I understand that I may revoke this directive at any time.

Signed____________________________________

City, County and State of Residence____________________________________

The declarant has been personally known to me and I believe said declarant to be of sound mind. I am twenty-one (21) years of age or older, I am not related to the declarant by blood or marriage, nor would I be entitled to any portion of the estate of the declarant upon the

SUPPLEMENT #3

death of said declarant, nor am I the attending physician of the declarant or any employee of the attending physician or a medical care facility in which the declarant is a patient, or a patient in the health care facility in which the declarant is a patient, nor am I financially responsible for the medical care of the declarant, or any person who has a claim against any portion of the estate of the declarant upon the death of the declarant.

Witness______________________________

Witness______________________________

State of Oklahoma

County of ______________________________

Before me, the undersigned authority, on this day personally appeared

________________________ (declarant), ______________________________ (witness)

and ______________________________ (witness) whose names are subscribed to the foregoing instrument in their respective capacities, and, all of said persons being by me duly sworn, the declarant declared to me and to the said witnesses in my presence that said instrument is his or her "Directive to Physicians," and that the declarant had willingly and voluntarily made and executed it as the free act and deed of the declarant for the purposes therein expressed.

The foregoing instrument was acknowledged before me this __________ day of ____________________, 19_____.

Signed______________________________

Notary Public in and for ________________
County, Oklahoma

My Commission Expires ______________________ day of ______________, 19_____.

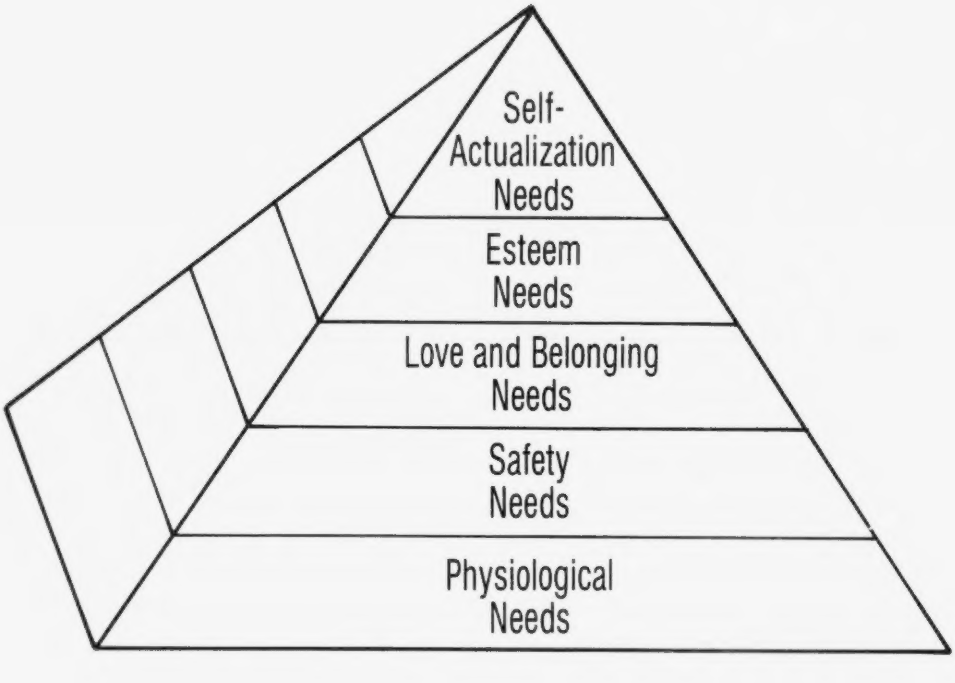
Copies available from:

Concern for Dying
250 West 57th Street
New York, NY 10107

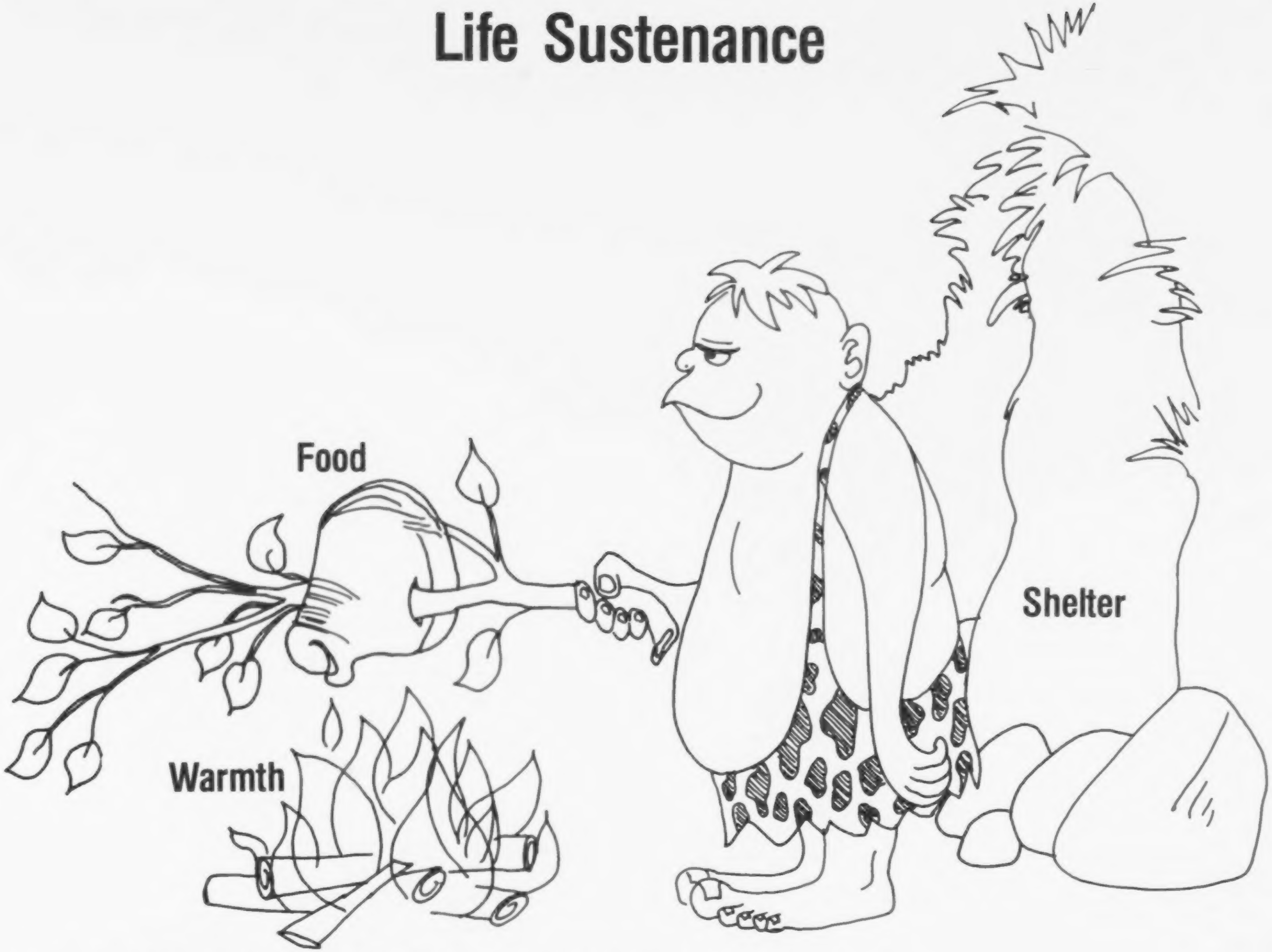
Statutory citation:

Oklahoma State. tit 63, paragraphs
3101-3111 (1985)

Maslow's Hierarchy of Human Needs



Life Sustenance



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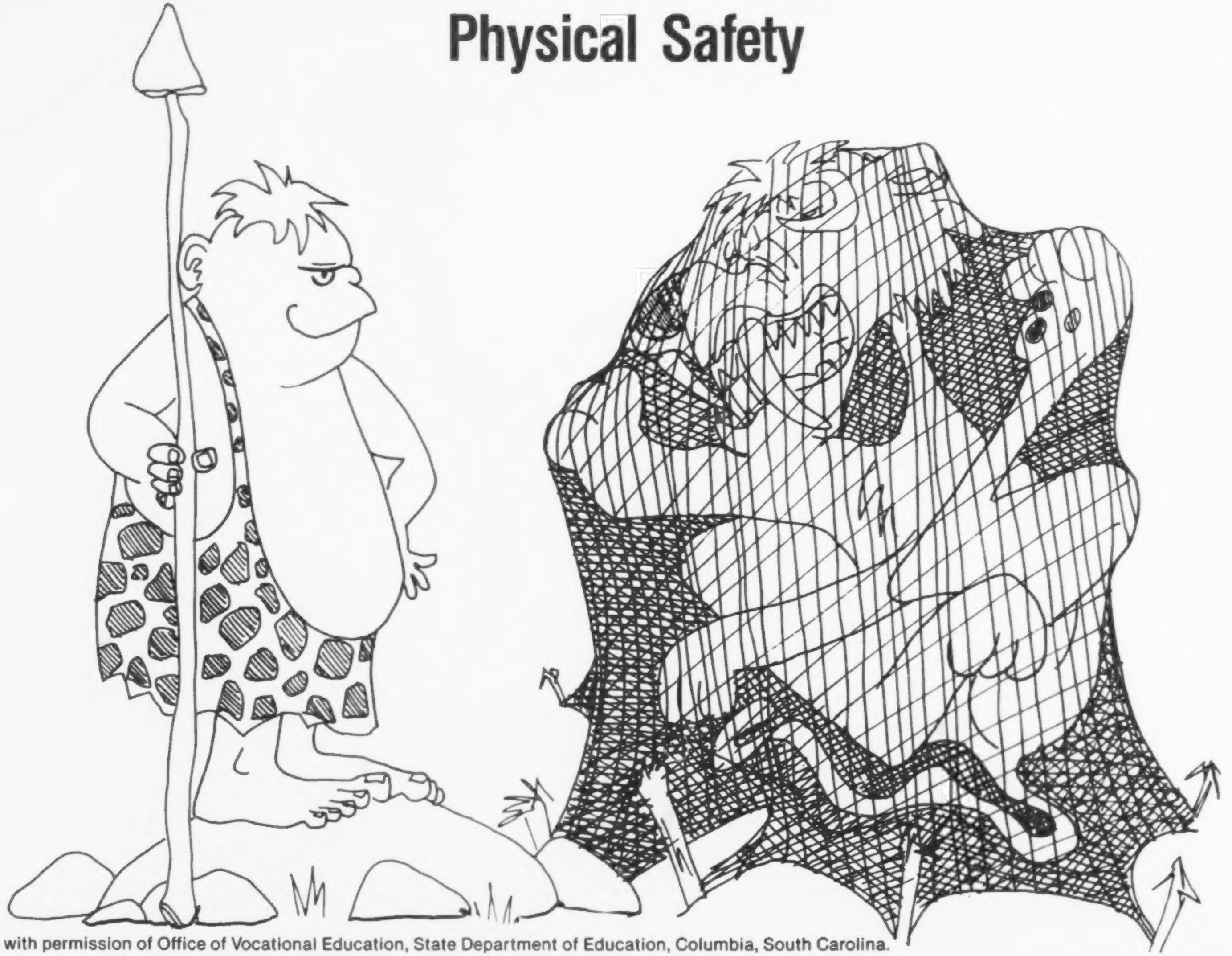
TM #2

AHC - 111-B

Physical Safety



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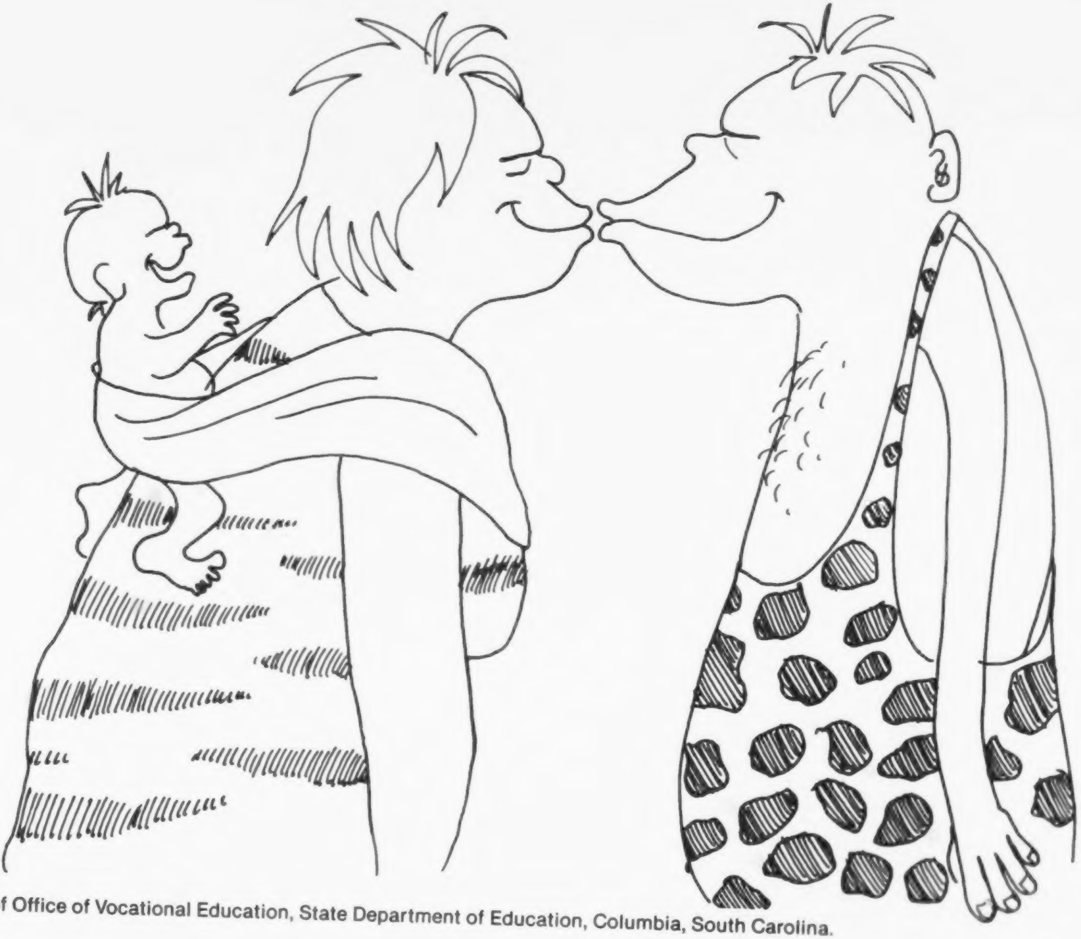
Love



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Esteem; Respect

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AHC - 117-B

Self-Realization

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TM #6

THE LIFE STAGES
UNIT II

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

A. 2
B. 2
C. 2
D. 1
E. 4
F. 1
G. 3
H. 2
I. 3
J. 4

Assignment Sheet #2 should not be evaluated by the instructor

THE LIFE STAGES
UNIT II

TEST

NAME ______________________________ SCORE ______________

1. Match to their correct definitions terms associated with the life stages. Write the correct numbers in the blanks.

_____a. Study of adolescence

_____b. Process of training and learning

_____c. Process of teething

_____d. Quality or state of being self-governing

_____e. Period at which biological changes reach a climax

_____f. Playing alongside, but not with, another child

_____g. Process of coming to full development

_____h. Study of the aging process

_____i. Energy or aptitude to begin an action

_____j. Primary teeth; also called *baby teeth*

_____k. Providing for discipline and learning experiences to aid in optimum growth and development

_____l. Pertaining to any activity or behavior involving muscular movement

_____m. Care of the older person; emphasis is on prevention of disabilities, treatment with special attention to the needs created by the aging process, and restoration of the person to a level consistent with the limitations imposed by the aging process

1. Autonomy
2. Gerontology
3. Maturation
4. Guidance
5. Deciduous teeth
6. Discipline
7. Motor
8. Ephebiatrics
9. Parallel play
10. Puberty
11. Initiative
12. Dentition
13. Geriatrics

2. Name the major contributions of Freud, Erikson, and Maslow.

a. Freud — ____

____

____

b. Erikson — ____

____

____

TEST

c. Maslow — ____________________

____

____

3. Identify levels of Maslow's hierarchy of human needs by assessing the following case studies. Write the correct levels in the blanks.

   a. Mrs. Smith, who has three children depending on her for support, has recently lost her job. Because she has no money, she was evicted from her apartment. She has no place to stay, and the family has not eaten for two days.

   Level of needs ____________________

   b. John has worked hard at his career and has done very well. This year he has been able to devote more of his time to his favorite pastime, painting. He feels his skills greatly improve with practice.

   Level of needs ____________________

   c. Mary enjoys her evening job at the local surgi-center, but lately she has noticed the same man in the parking lot when she leaves at night. She is afraid of him, so she is thinking of resigning her position.

   Level of needs ____________________

   d. Gary has been dating the same girl for two years. Yesterday she told him she wanted to break up; Gary is in love with her and is devastated.

   Level of needs ____________________

4. Describe the physiologic changes of aging and the results of those changes as they occur in the body systems of the elderly. Choose two systems only.

   a. System — ____________________

   Changes and results — ____________________

   ____

   ____

   ____

   ____

   ____

TEST

b. System — ______________________________

Changes and results — ______________________________

____

____

____

____

____

5. Match to their correct definitions terms associated with death and dying. Write the correct numbers in the blanks. Definitions continue on the next page.

_____a. To feel or express sorrow after a loss

_____b. Tribute; personal review of an individual's life

_____c. Emotional reaction that follows the loss of something

_____d. Incinerating a dead body

_____e. Ceremony during which relatives and friends pay their respects and comfort the family; body is present at the ceremony

_____f. Deliberately bringing about the death of a person who is suffering from an incurable disease or condition, as by administering a lethal drug

_____g. Cessation of life as indicated by the absence of heartbeat or respiration

_____h. Ceremony during which relatives and friends pay their respects and comfort the family; body is not present at the ceremony

_____i. Deliberately bringing about the death of a person who is suffering from an incurable disease or condition by allowing the person to die by withholding treatment

_____j. Techniques in which cold is applied for a variety of therapeutic reasons, including brief anesthesia, destruction of superficial skin lesions, and preservation of cells, tissue, organs, or the entire body

_____k. Notice of someone's death, as in a newspaper, usually with a brief biography

1. Burial
2. Funeral
3. Bereavement
4. Mourn
5. Active euthanasia
6. Biological death
7. Eulogy
8. Grief
9. Memorial service
10. Obituary
11. Cryonics
12. Cremation
13. Clinical death
14. Passive euthanasia

TEST

______l. Act or process of burying a dead body

______m. Total absence of activity in the brain and central nervous system, the cardiovascular system, and the respiratory system as observed and declared by a physician; also called *legal death* and *brain death*

______n. Deprivation of a loved one by death

6. Match stages in dealing with the reality of one's own death to their correct descriptions. Write the correct number in the blanks.

______a. Knowing that death is near and being ready for it

______b. Ignoring a terminal illness; usually occurs when a patient first learns that he or she is terminally ill

______c. Resenting those who will remain healthy and alive

______d. Accepting the fate of death but trying to get more time

______e. Expressing grief over past losses, things not done, and wrongs committed

1. Anger
2. Bargaining
3. Acceptance
4. Depression
5. Denial

7. Discuss common reactions of the bereaved.

a. Physical — ____________________

____

____

____

b. Emotional — ____________________

____

____

____

8. List the stages of mourning.

a. ____________________

b. ____________________

c. ____________________

TEST

9. Select from the following list guidelines for handling personal grief. Write an "X" in the blank before each correct answer.

_____a. Talk out your grief and cry

_____b. Allow yourself to recognize the full reality of the death

_____c. Keep the deceased's room as it was when he or she was living

_____d. Expect to overcome grief in two months

_____e. Accept the help of friends and relatives

_____f. Try to avoid unnecessary or long-term feelings of guilt

_____g. Allow time to work through the grief

_____h. Make major decisions right away

_____i. Talk about the dead person often so that others will remember

_____j. Remember the good times that were shared with the deceased

10. Select from the following list guidelines for helping friends who are bereaved. Write an "X" in the blank before each correct answer.

_____a. Tell bereaved persons that you know how they feel

_____b. Help lay out a plan of resocialization

_____c. Do not take the lead in conversation

_____d. Avoid overinvolvement

_____e. Tell the bereaved that they will be better soon

_____f. Tell the bereaved to be strong

_____g. Get in touch and stay in touch

_____h. Do not cite examples from your own life and experiences

_____i. Share your feelings

_____j. Suggest community resources

_____k. Tell the bereaved not to worry

TEST

11. State guidelines for funeral etiquette.

 a. ______________________________

 b. ______________________________

 c. ______________________________

(NOTE: Test item 12 lists an assignment sheet. It is an important part of this test. If if has not been completed, check with your instructor.)

12. Identify growth characteristics and stages of personality development.

THE LIFE STAGES
UNIT II

ANSWERS TO TEST

1. a. 8
   b. 6
   c. 12
   d. 1
   e. 10
   f. 9
   g. 3
   h. 2
   i. 11
   j. 5
   k. 4
   l. 7
   m. 13

2. Answers should include the following
   a. Sigmund Freud — Founded field of psychoanalysis; developed theory of personality development based on five stages of psychosexual development
   b. Erik Erikson — Developed theory of personality development based on developmental tasks
   c. Abraham H. Maslow — Identified hierarchy of human needs

3. a. Physiological needs
   b. Self-actualization needs
   c. Safety needs
   d. Love and belonging needs

4. Evaluated to the satisfaction of the instructor

5. a. 4
   b. 7
   c. 8
   d. 12
   e. 2
   f. 5
   g. 13
   h. 9
   i. 14
   j. 11
   k. 10
   l. 1
   m. 6
   n. 3

6. a. 3
   b. 5
   c. 1
   d. 2
   e. 4

ANSWERS TO TEST

7. Discussion should include the following

   a. Physical

      1) Numbness of body parts
      2) Pain and tightness in the throat
      3) Difficulty with eating and sleeping
      4) Physical fatigue

   b. Emotional

      1) Guilt
      2) Anger and hostility toward others
      3) Anger toward the dead person
      4) Relief or joy

8. a. Shock
   b. Intense pain and feelings of loss
   c. Acceptance and pleasant memories of the deceased

9. a, b, e, f, g, j

10. b, c, d, g, h, i, j

11. a. Wear conservative clothing
    b. Share feelings with family members
    c. Do not attend private services unless you were related to the deceased or specifically invited

12. Evaluated to the satisfaction of the instructor

SOCIAL HEALTH
UNIT III

SUGGESTED ACTIVITIES

I. Unit contents

  A. Objective sheet

  B. Suggested activities

  C. Supplement #1 — Crossword Puzzle

  D. Transparency masters

    1. TM #1 — The Extended Family
    2. TM #2 — The Nuclear Family
    3. TM #3 — The Single-Parent Family
    4. TM #4 — The Cooperative Family
    5. TM #5 — The Communal Family
    6. TM #6 — The Blended Family
    7. TM #7 — Ways that Families Assign Tasks
    8. TM #8 — Contraception Methods
    9. TM #9 — The Right Pill
    10. TM #10 — The Right Pill (Continued)

  E. Information sheet

  F. Assignment sheets

    1. Assignment Sheet #1 — Assess Personal Expectations of Family Life
    2. Assignment Sheet #2 — Determine Challenges Faced by Types of Families
    3. Assignment Sheet #3 — Assess Task Assignments
    4. Assignment Sheet #4 — Respond to Decision-Making Situations
    5. Assignment Sheet #5 — Distinguish Between Love and Infatuation
    6. Assignment Sheet #6 — Respond to Case Studies Concerning Decisions
    7. Assignment Sheet #7 — Consider Solutions to Child Abuse
    8. Assignment Sheet #8 — Explore Feelings about Drug Abuse
    9. Assignment Sheet #9 — Record Drug-Related Media Messages

SUGGESTED ACTIVITIES

G. Answers to assignment sheets

H. Test

I. Answers to test

II. Instructor's guide

A. BEFORE TEACHING THIS UNIT, GET THE APPROVAL OF YOUR PRINCIPAL AND FOLLOW YOUR PRINCIPAL'S GUIDELINES. One of those guidelines may be getting consent from parents of some or all of your students before teaching this unit because it deals with many sensitive issues. If some parents refuse to sign the form, assign their students some other task while you are teaching this unit.

(NOTE: Have the students take this unit home to show their parents. This would encourage family involvement, and the parents would be able to make informed decisions.)

Sample Consent Form

The Social Health unit in the Allied Health Careers curriculum deals with the following topics:

Family Structures
Contraception
Teenage Pregnancies
Sexually Transmitted Diseases
Child Abuse
Substance Abuse

An understanding of these topics is essential for anyone entering a health care career. Health care workers will deal with many different individuals, some of whom will have problems in areas covered in this unit. In addition, these topics are beneficial for your student's general education. If presented with factual information, the student will be better prepared to make informed decisions regarding his or her own personal life.

If you wish your student to be taught this material, please indicate so on the form and send it back to the instructor.

I do wish my child to be taught this information ____________________

I do not wish my child to be taught this information ____________________

__________________________________ Signature of parent or guardian

____

SUGGESTED ACTIVITIES

B. Order materials to supplement unit.

1. Computer software

   a. *Drugs.* Available for the Apple or IBM, this software describes the active ingredients/contents, methods of use, preparations, short-term effects, prevalence of use, and legal status of various drugs. Drugs reviewed include cocaine, cannabis, minor tranquilizers, LSD, solvents, alcohol, amphetamines, caffeine, sedative hypnotics, opiates, tobacco, antihistamines, and PCP. This program has no graphics.

   b. *Contraception.* Available for the Apple or IBM, this software describes how eight different contraceptive methods work, their effectiveness, safety, cost, and possible adverse reactions. Methods discussed include the rhythm method, the diaphragm, condom, foams, jellies, birth control pills, IUD, sponge, and sterilization procedures. This program has no graphics.

   (NOTE: The above programs are manufactured by QUEUE, Inc. and can be ordered from Teachware, P.O. Box 94365, Oklahoma City, Oklahoma 73143.)

2. Films

   a. *Chalk Talk.* 45 minutes, 1981. Available from American Journal of Nursing, 555 W. 57th Street, New York, NY 10019. Father Martin outlines the effect of alcohol on the body, mind, and behavior patterns.

   b. *Dead Is Dead.* 21 minutes, 1973. Available from AIMS Instructional Media, 626 Justin Avenue, Glendale, CA 91201. This film traces the step-by-step destruction of humans addicted to pills and needles.

   c. *Epidemic.* 27 minutes, 1982. Available from MTI Teleprograms, Inc., 3710 Commercial Avenue, Northbrook, IL 60062. *Epidemic* deals with kids on drugs and alcohol and explains the effects of drugs and alcohol on their minds and bodies.

   d. *Teenage Father.* 28 minutes, 1978. Available from Children's Home Society of California, 5429 McConnell Avenue, Los Angeles, CA 90066. This film covers a high school pregnancy and the problems and responsibilities facing teenagers.

   e. *Prisoners of Chance.* 23 minutes, 1979. Available from Filmfair Communications, 10900 Ventura Boulevard, Box 1728, Studio City, CA 91604. The problems, philosophies, and life-styles of several teenagers who have become parents are dramatized in this film.

   f. *Teenagers Talk: Getting Through Adolescence.* 12 minutes, 1975. Available from BFA Educational Media, 468 Park Avenue, S., New York, NY 10016. Interviews were conducted with kids who had been through various stages of adolescence and these stages were interpreted with visual metaphors in animation.

SUGGESTED ACTIVITIES

g. *Saying No.* 17 minutes, 1982. Available from Perennial Education Inc., 930 Pitner Avenue, Evanston, IL 60202. Young women talk about their personal decisions regarding sexuality, how they have been affected by their decisions, how they feel about themselves, and how they respect themselves for having the courage and willpower to abstain from sex when the "popular" course of action is to be sexually involved.

h. *Help! I'm a New Parent.* 24 minutes, 1979. Available from Churchill Films, 622 N. Robertson Boulevard, Los Angeles, CA 90069. This film shows the joys and trials of having a new baby and how reality differs from romantic expectation.

(NOTE: These films are available on a free-loan basis to Oklahoma instructors. Oklahoma teachers may order from the State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364. Out-of-state teachers must order from the addresses listed with the film.)

3. Transparencies and competency profiles

(NOTE: Transparencies and competency profiles for this manual are available from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

C. Introduce unit.

- Read aloud the poem in Assignment Sheet #1, and have the students discuss what their concept of a family includes.
- Emphasize to students that pictures created in Assignment Sheet #1 may be realistic or abstract. Lend special support to the students who have difficult family lives.
- Have the students think about decisions they have made recently. Emphasize that a lot of decisions are minor, but they could also be major and change the course of the person's life.
- Have the students think about their own personal values, and stress that many decisions will be based on those.
- Discuss the problems of teenage pregnancies, and explain the importance of peer pressure.
- Mention some of the topics in the national news that are chemical related. Discuss what students are doing to help in the war on drugs, and what celebrities are involved in public awareness campaigns.

D. Provide students with unit.

E. Discuss unit and specific objectives.

SUGGESTED ACTIVITIES

F. Discuss information and assignment sheets.

1. Use Information Sheet, Section I, to discuss terms and definitions associated with social health.

    - Have the students think about families they are familiar with, and have them discuss what types of family structures they are aware of.
    - Differentiate between infatuation and love. Explain there are many different types of love. Have the students think about family, friends, and acquaintances and about the different feelings they have for them.
    - Explain the difference between drug abuse, addiction, and misuse; give examples of each.

2. Use Information Sheet, Sections II and III, to discuss the types of family organization and the types of families.

    - Stress that there are advantages and disadvantages to each family type and organization. Point out that there is no perfect family.
    - Illustrate your discussion with Transparencies #1-#6.
    - Have students compare family traditions and customs related to their family type and organization.

      EXAMPLES: Times that gifts are exchanged at Christmas
      Ways that birthdays are acknowledged

    - Have students complete Assignment Sheet #1.
    - Discuss the high divorce rate and how divorce affects children. Mention that many times children feel responsible for the parental separation, and that many times it may be better for the entire family if the parents do divorce.
    - Discuss the problems a single parent faces as head of the household.

      EXAMPLES: Sole breadwinner
      Total responsibility for the children
      Feelings of guilt because the children do not have two parents

    - Point out that the number of single-parent families is increasing. Discuss factors that contribute to that increase.

      EXAMPLES: High divorce rate
      Single people adopting children
      Unmarried pregnant women choosing to keep their babies
      Single women conceiving children through artificial insemination

SUGGESTED ACTIVITIES

- Have the students complete Assignment Sheet #2. Discuss the challenges faced by each type of family.
- Discuss how the structure of family life affects the household tasks that must be accomplished.
- Complete the chart in Assignment Sheet #3 as a group, using Transparency #7; then have the students complete Assignment Sheet #3 individually.
- Ask students to suggest other tasks that could be added to the list in Assignment Sheet #3. Ask students who decides how those tasks should be assigned.

  EXAMPLES: Who takes child to dentist or doctor appointment?
  Who replaces missing buttons on a shirt?

3. Use Information Sheet, Sections IV and V, to discuss characteristics of love and infatuation, and types of intimate relationships.

- Point out that there is a great difference between love and infatuation.
- Have the students complete Assignment Sheet #4. Stress that this assignment sheet will not be graded.
- Emphasize that being intimate with someone does not have to mean that one is sexually involved with that person.
- Point out to students that they may reach each level of intimacy with people every day.
- Ask students to give examples of current movie or television characters exhibiting different levels of intimacy.

  EXAMPLE: By the end of the day in *The Breakfast Club*, the group of teenagers had reached emotional intimacy.

- Share the following letter from Ann Landers.

  (NOTE: In the seventh paragraph, Ann Landers refers to sexual excitement and intimacy. Point out to your students that they may have intimate relations with a person *without* sexual involvement. Also explain that while the piece is written from a female's point of view, males are just as likely to become infatuated as females.)

SUGGESTED ACTIVITIES

LOVE OR INFATUATION?

Infatuation is instant desire. It is one set of glands calling to another. Love is friendship that has caught fire. It takes root and grows — one day at a time.

Infatuation is marked by a feeling of insecurity. You are excited and eager, but not genuinely happy. There are nagging doubts, unanswered questions, little bits and pieces about your beloved that you would just as soon not examine too closely. It might spoil the dream.

Love is quiet understanding and the mature acceptance of imperfection. It is real. It gives you strength and grows beyond you — to bolster your beloved.

You are warmed by his presence, even when he is away. Miles do not separate you. You want him nearer. But near or far, you know he is yours and you can wait.

Infatuation says, "We must get married right away. I can't risk losing him."

Love says, "Be patient. Don't panic. He is yours. Plan your future with confidence."

Infatuation has an element of sexual excitement. If you are honest, you will admit it is difficult to be in one another's company unless you are sure it will end in intimacy.

Love is the maturation of friendship. You must be friends before you can be lovers.

Infatuation lacks confidence. When he's away, you wonder if he's cheating. Sometimes you even check.

Loves means trust. You are calm, secure and unthreatened. He feels that trust, and it makes him even more trustworthy.

Infatuation might lead you to do things you'll regret later, but love never will.

Love is an upper. It makes you look up. It makes you think up. It makes you a better person than you were before.

Ann Landers

Used with permission of Ann Landers, News America Syndicate, as seen in *The Daily Oklahoman.*

SUGGESTED ACTIVITIES

- Have students complete Assignment Sheet #5. Ask them to think back to previous experiences they have had with love. Encourage them to decide whether they were feeling infatuation or love.
- Ask students to identify the levels of intimacy that they have reached with people during the past day.
- Have the students complete Assignment Sheet #6; emphasize that students should not yield to peer pressure.

4. Use Information Sheet, Sections VI-VIII, to discuss methods of contraception, responsibilities that accompany the decision to become sexually active, and consequences related to teenage pregnancies.

- Discuss the different types of birth control and how effective they are.
- Show Transparencies #8-#10.
- Invite a resource person to come to class and show the students some of the contraceptive devices.
- Have a class discussion of the responsibilities of becoming sexually active; have the students respond to each responsibility.
- Discuss peer pressure. Point out that even though friends are important parts of students' lives, students need to weigh every decision carefully from their own points of view, not that of their friends. Many decisions students make now will impact upon their futures.
- Have students complete Assignment Sheet #6. Allow them to share their responses with the rest of the class.
- Discuss the saying that you do not marry just a spouse, you marry a family. Relate the problems of teenage pregnancies to in-law relationships.
- Invite a representative from the state health department to be a guest speaker. The department may have excellent slides on these subjects.
- Point out that the costs of a pregnancy and delivery are only the beginning of the expenses of having a child. Discuss current estimates of the costs of rearing a child.
- Ask class why the possibility of child abuse increases for children born to teenage parents.
- Describe types of neonate problems associated with babies born to teenage mothers.

  EXAMPLES: Low birth weight, toxemia of pregnancy

- When discussing problems related to teenage pregnancy, point out that all of these problems do not occur with every teenage pregnancy.

SUGGESTED ACTIVITIES

5. Use Information Sheet, Sections IX and X, to discuss sexually transmitted diseases. Remember to be factual and not judgmental.

   - Point out that sexually transmitted diseases (STDs) have reached an epidemic rate in our society, with one of the reasons for their rise being our modern morality.

   - Stress prevention and early treatment for STDs.

   - Point out that one person who has an STD can directly and indirectly infect many others.

   - Stress that STDs can affect anyone from any societal background, and that many people may contract a STD from a trusted partner.

   - Distinguish among herpes simplex, herpes zoster, and genital herpes.

   - Discuss ways that a person can contact AIDS other than by sexual contact. Point out that for the sake of blood transfusion recipients, blood is now carefully screened before it is used for a transfusion.

6. Use Information Sheet, Section XI, to discuss types of child abuse.

   - Discuss the ten health status goals for children as approved by the American Academy of Pediatrics:

     1. All children should be wanted and born to healthy mothers.
     2. All children should be born well.
     3. All children should be immunized against the preventable infectious diseases for which there are recommended immunization procedures.
     4. All children should have good nutrition.
     5. All children should be educated about health and the health care system.
     6. All children should live in a safe environment.
     7. All children with chronic handicaps should be able to function at their optimal level.
     8. All children should live in a family setting with an adequate income to provide basic needs to ensure physical and intellectual health.
     9. All children should live in an environment that is as free as possible from contaminants.
     10. All adolescents and young people should live in a societal setting that recognizes their special health, personal, and social needs.

     Used with permission of the American Academy of Pediatrics.

   - Check with the local police department as well as county and state agencies of social services, protective services, children and family services, or welfare services on where in your area to get information on child abuse and assistance for victims and abusers.

SUGGESTED ACTIVITIES

- Contact the National Child Abuse Hot Line (800-422-4453), which operates twenty-four hours a day, for free literature on detecting and reporting abuse. The National Child Abuse Hot Line also provides crisis intervention, counseling, legal and reporting referrals, and information on state laws concerning reporting suspected abuse.

  (NOTE: Call-in services provide confidentiality for the person reporting the suspected abuse.)

- Be sensitive in your approach to the subject of child abuse because this is a very sensitive issue and some of your students may have been or may now be victims of child abuse. If a student shows any signs of distress, do not pressure that student; allow the student to leave the class if need be.

- Be prepared to counsel any student that comes from an abusive family. Be CONFIDENTIAL and nonjudgmental. Get help for the student; and if possible, see that the family gets the help they need. Discuss the situation with your principal prior to taking any action.

- Point out that many abusive parents do not mean to harm their children and in fact often love them. Mention some of the pressures that might precipitate abuse, e.g., financial worries, personal stress, chemical use.

- Ask what defense mechanism is involved when stress or anger at someone else triggers child abuse.

- Have the students research newspapers and magazines for current articles dealing with child abuse.

  EXAMPLE: "The Unspeakable Problem of Sexual Abuse and What You Can Do About It" by Rebecca Harrison; *Learning86* (September, 1986), pp. 71-73.

- Ask students to determine which level of Maslow's hierarchy of human needs is violated by each type of child abuse.

- Mention that many runaways have been victims of child abuse and have run away because they can no longer tolerate their home situations.

- Point out that a high proportion of prison inmates were childhood victims of abuse.

- Discuss the cyclical nature of child abuse.

  EXAMPLE: Many victims of child abuse repeat the pattern of abuse with their own children.
  Victims of child abuse sometimes grow up to reverse the situation and abuse their parents when the parents become elderly and dependent on the children.

SUGGESTED ACTIVITIES

- Discuss the implications such as psychological effects that an abused child may have to deal with in later life.

- Discuss the consequences of child abuse.

  EXAMPLES: To the victim:
  Death
  Permanent physical, mental, or emotional injury
  Failure of an infant to thrive from lack of human touch
  Perpetuation of cycle of abuse with own children, parents

  To the abuser:
  Guilt
  Imprisonment
  Injunction not to try to see child
  Parent abuse from grown-up victim

- Have students complete Assignment Sheet #7 to distinguish among types of child abuse and to consider solutions to the problem of child abuse.

7. Use Information Sheet, Sections XII-XIV, to discuss substance use and abuse.

   - Stress that any high school student has been exposed to drugs in a direct or indirect manner. Make your class feel comfortable about discussing the subject.

   - Contact your local police department to find out what substances are commonly abused in your community. Ask about the rate of impaired drivers and accidents.

   - Point out the negative effects of alcohol; state that it is the most widely abused drug on the market as well as the most socially acceptable.

   - Refer to current topics dealing with chemical use and abuse.

   - Find out what your local community does in the way of sentences for drug abusers and pushers. Stress the fact that most street drugs are illegal.

   - Ask the students to discuss how they feel about some of the chemically related issues such as police dogs in the high school, mandatory drug testing, or spot searches.

   - Discuss the street names of drugs so that the students can associate the proper names with the ones they may have heard.

   - Point out that an otherwise rational person on certain types of drugs such as PCP, may commit violent acts without being aware of doing them.

SUGGESTED ACTIVITIES

- Discuss the concept of the Just Say No Clubs.

  (NOTE: To receive a 64-page booklet on how to set up a Just Say No Club in your community, send $3.50 to Just Say No, 1777 North California Boulevard, Walnut Creek, California 94596; the toll-free number is 800-258-2766.)

- Have students complete Assignment Sheet #8 to help them crystalize their feelings about drugs. Stress that this assignment will not be graded.

- Introduce Assignment Sheet #9 by pointing out some chemical-related media messages you have noticed. Have students complete Assignment Sheet #9.

- Have students complete Supplement #1, the crossword puzzle, to reinforce the unit.

G. Give test.

H. Reteach and retest if necessary.

I. Complete appropriate section of students' competency profiles.

III. Unit references

A. Carroll, Charles R. *Drugs in Modern Society.* Dubuque, Iowa: William C. Brown Publishers, 1985.

B. Ingalls, Joy and Constance Salerno. *Maternal and Child Health Nursing, 5th ed.* St. Louis: C.V. Mosby, 1983.

C. Kates, Donna. *Marriage and Family Life.* Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1985.

D. Mott, Sandra R., Nancy Fiero Fazekas, and Susan Rowen James. *Nursing Care of Children and Families: A Holistic Approach.* Menlo Park, California: Addison-Wesley, 1985.

SOCIAL HEALTH
UNIT III

SUPPLEMENT #1 — CROSSWORD PUZZLE

Use the following clues to work the crossword puzzle on the next page.

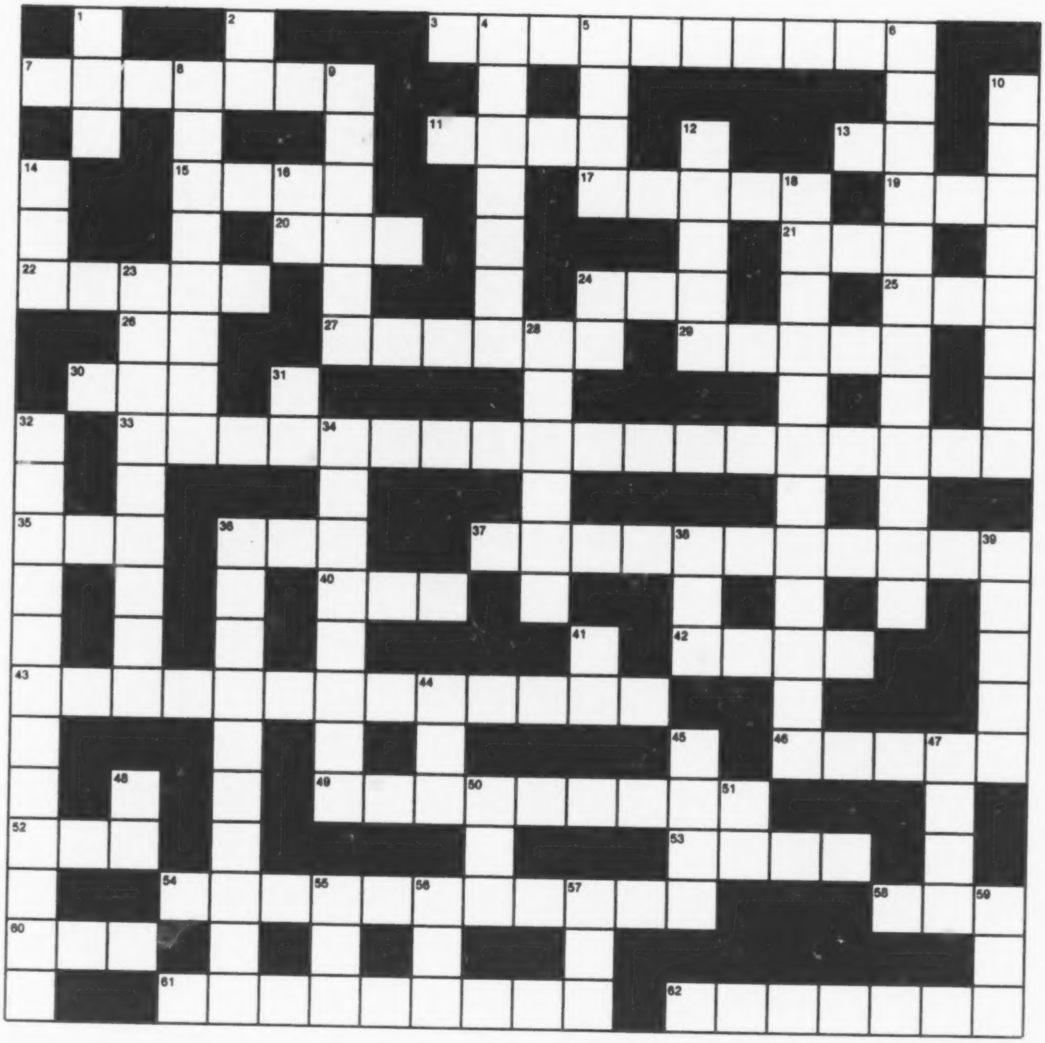
ACROSS

3. Avoiding sex entirely
7. Type of family in which two parents live together with their child or children
11. Not fat
13. Commercial message
15. Shade between black and white
17. Substances intended for medicinal purposes
19. Opposite of *on*
20. Sexually transmitted disease (abbr)
21. Incorporated (abbr)
22. Possible result of substance abuse
24. Goal
25. Card or domino with one pip
26. Prefix meaning *two*
27. Unmarried woman
29. Wrath
30. Fuss
33. Prescriptive contraceptive (2 wds)
35. Parcel of land
36. Two
37. Puppy love
40. Green vegetable
42. Physiological or psychological requirement
43. Birth control
46. With 8 Down, a sterility operation for females
49. Inflammation of the joints
52. Possess
53. Total commitment
54. Refers to type of family in which the mother makes major decisions
58. To utilize
60. Finish
61. Drug that speeds up central nervous system
62. Common depressant

DOWN

1. Intrauterine device (abbr)
2. Him
4. Type of family in which a parent and stepparent live with child
5. To care for
6. Abnormal condition that affects the endocardium and heart valves
8. With 46 Across, a sterility operation for females
9. Nonprescriptive method of birth control
10. Stimulant in coffee and tea
12. Tumorlike mass of granulation tissue
14. Common name for father
16. While, when, like
18. Type of family in which one parent lives with child or children (2 wds)
23. Physiological or psychological dependence
24. Article used before words with a beginning vowel
28. Short trip for a particular purpose
31. Railroad (abbr)
32. Drug that distorts reality and perception
34. Loss of hair
36. Drug that slows down body systems
38. Number before eleven
39. Refers to birth
41. Just say _______ to drugs
44. To caress or stroke
45. Oral contraceptive
47. Acquired Immune Deficiency Syndrome (abbr)
48. Opposite of *off*
50. She
51. South (abbr)
55. Sailors' drink
56. To be sick
57. Not cold
59. Snakelike fish

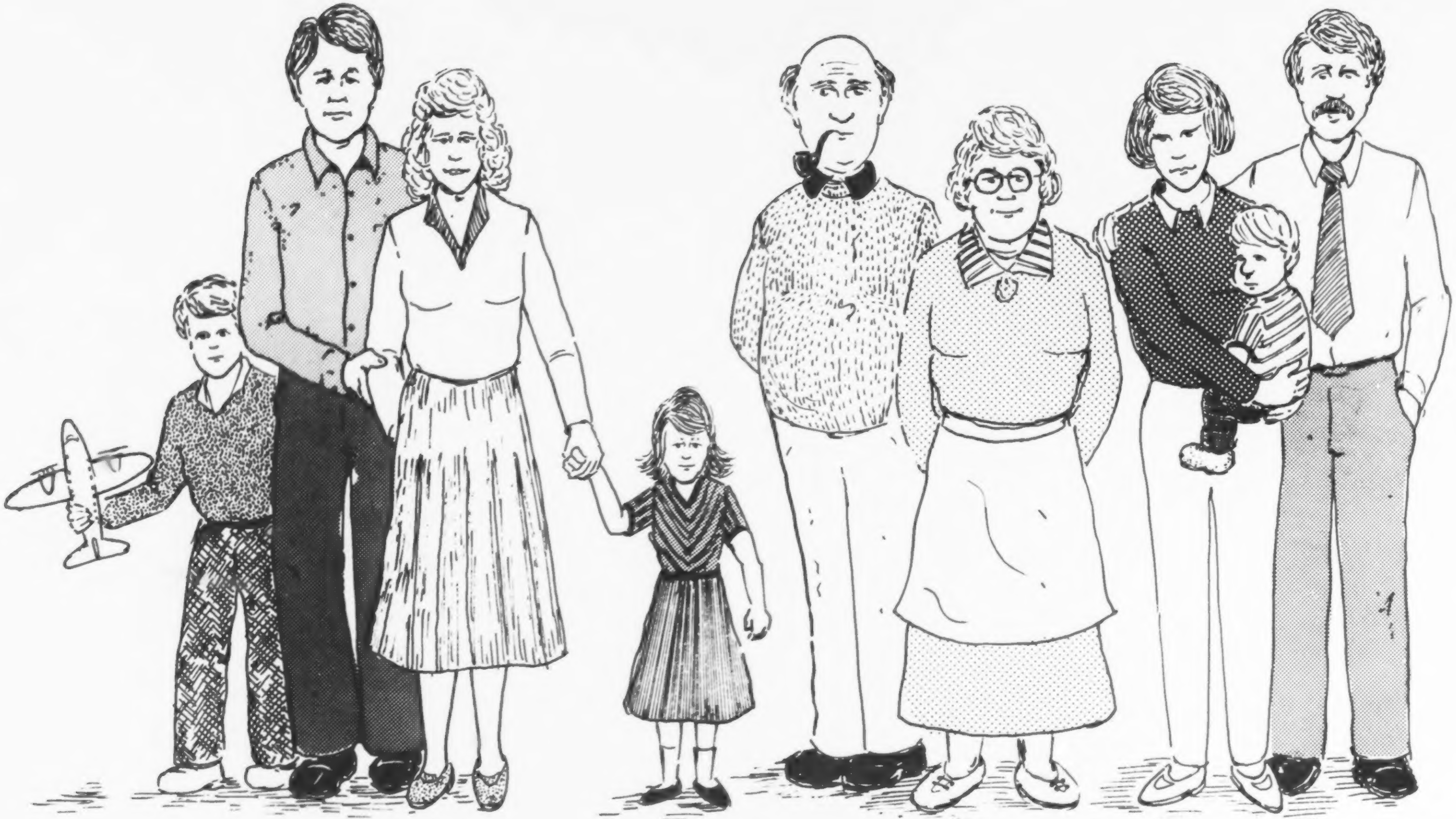
SUPPLEMENT #1



SUPPLEMENT #1

	1 I			2 H				3 A	4 B	S	5 T	I	N	E	N	C	6 E		
7 N	U	C	8 L	E	A	9 R			L		E						N		10 C
	D		I			H		11 L	E	A	N		12 G			13 A	D		A
14 D			15 G	R	16 A	Y			N		17 D	R	U	G	18 S		19 O	F	F
A			A		20 S	T	D		D				M		21 I	N	C		F
22 D	E	23 A	T	H		H			E		24 A	I	M		N		25 A	C	E
		26 D	I			27 M	A	I	D	28 E	N		29 A	N	G	E	R		I
	30 A	D	O		31 R					R					L		D		N
32 H		33 I	N	T	R	34 A	U	T	E	R	I	N	E	D	E	V	I	C	E
A		C				L				A					P		T		
35 L	O	T		36 D	U	O			37 I	N	F	A	38 T	U	A	T	I	O	39 N
L		I		E		40 P	E	A		D			E		R		S		A
U		O		P		E					41 N		42 N	E	E	D			T
43 C	O	N	T	R	A	C	E	44 P	T	I	O	N			N				A
I				E		I		E					45 P		46 T	U	B	47 A	L
N		48 O		S		49 A	R	T	50 H	R	I	T	I	51 S				I	
52 O	W	N		S					E				53 L	O	V	E		D	
G			54 M	A	T	55 R	I	56 A	R	C	57 H	A	L				58 U	S	59 E
60 E	N	D		N		U		I			O								E
N			61 S	T	I	M	U	L	A	N	T		62 A	L	C	O	H	O	L

The Extended Family



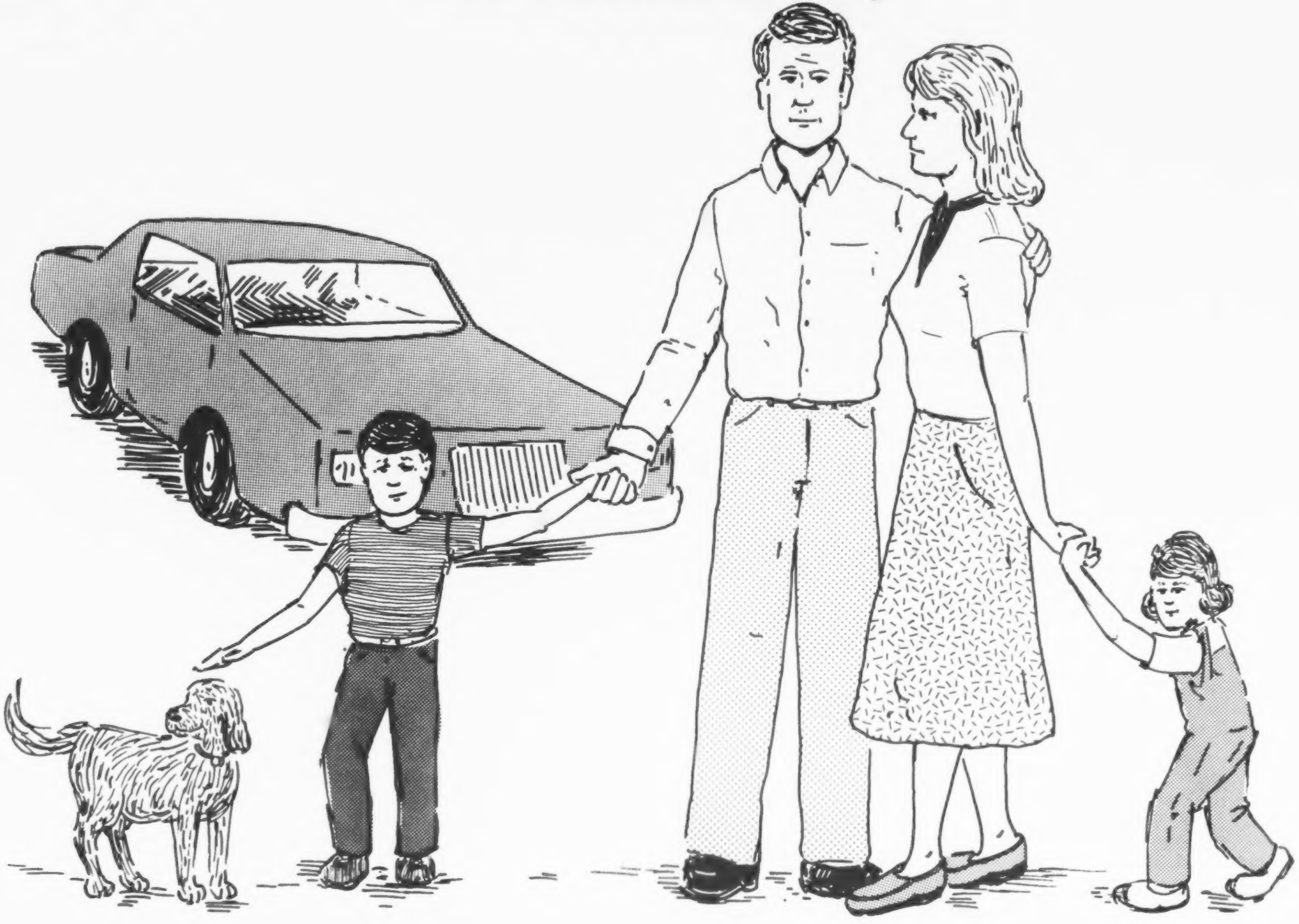
TM #1

266

267

AHC - 173-B

The Nuclear Family



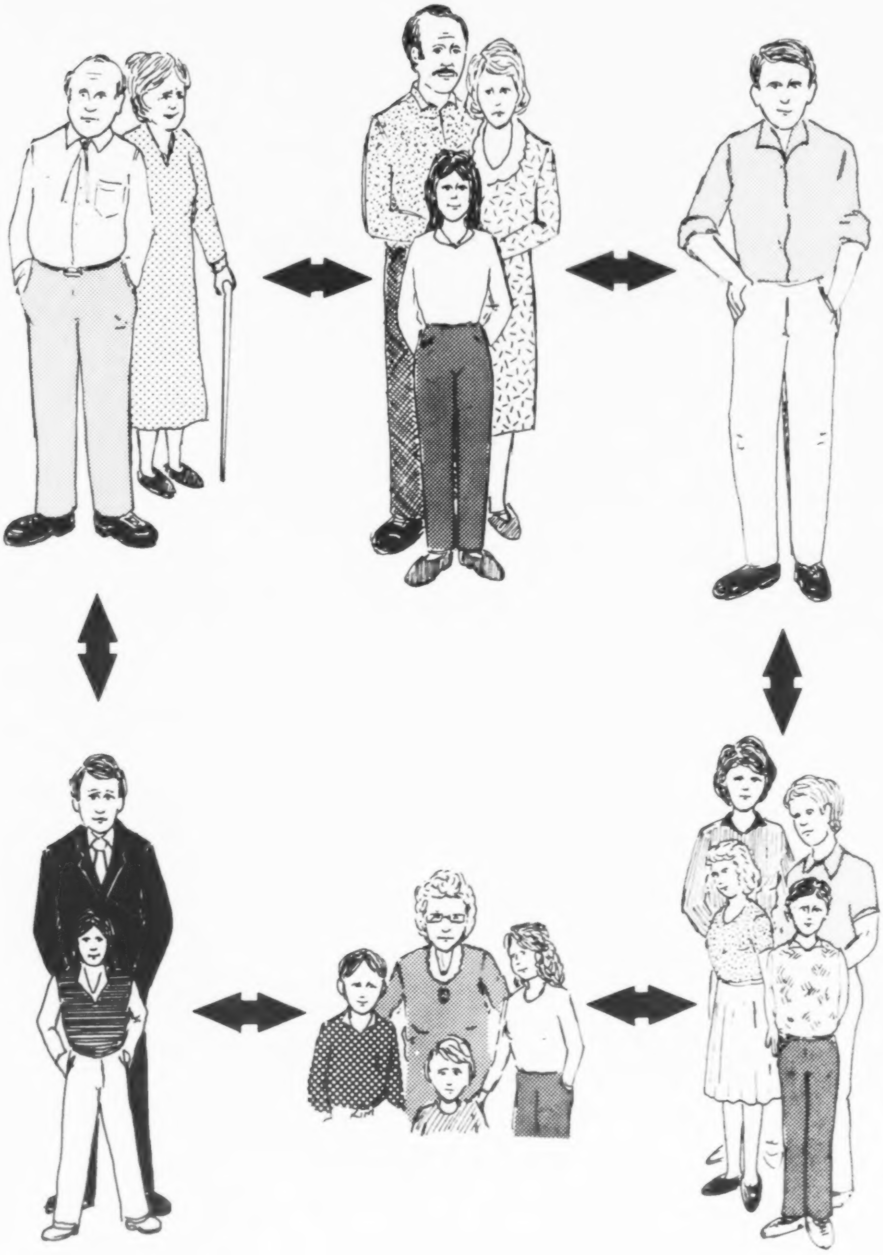
The Single-Parent Family

TM #3

AHC - 177-B

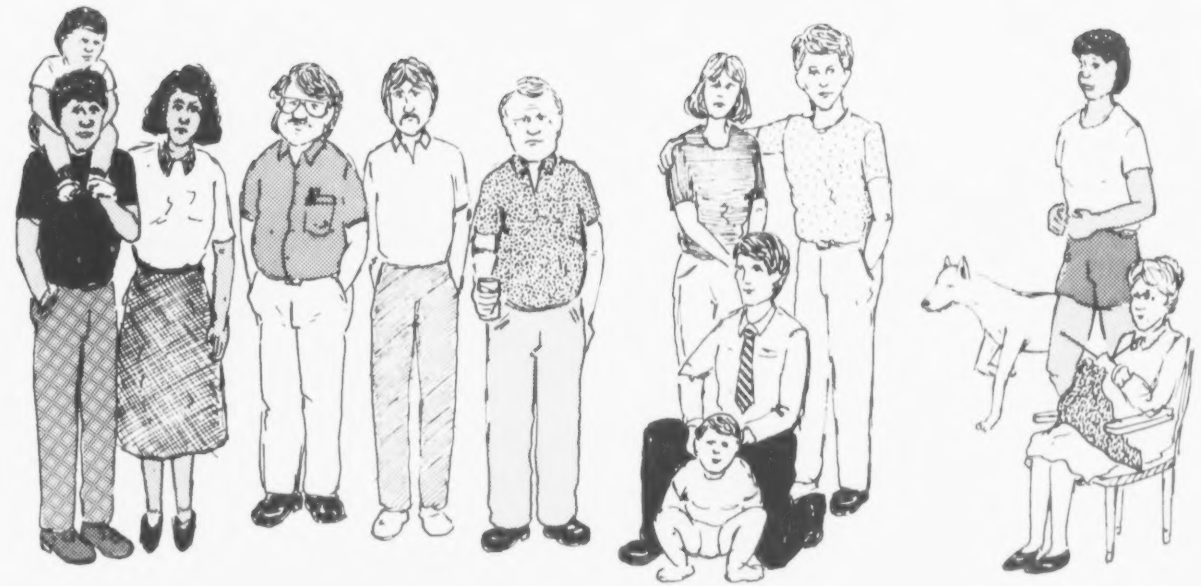
AHC - 179-B

The Cooperative Family



TM #4

The Communal Family



TM #5

AHC - 181-B

The Blended Family

Ways That Families Assign Tasks

	FAMILY A					FAMILY B			FAMILY C	
Who should	Mother	Father	Teenage Son	Teenage Daughter	Seven-Year-Old Son	Single Mother/Father	Teenage Son	Teenage Daughter	Single Mother/Father	Teenage Daughter/Son
Wash the dishes?										
Mow the lawn?										
Wash the car?										
Take out the trash?										
Weed the garden?										
Dust and vacuum?										
Water the lawn?										
Cook the meals?										
Clean the bathroom?										
Iron the clothes?										
Shop for groceries?										
Clean the garage?										
Pay the bills?										
Do the laundry?										
Change the beds?										
Balance the checkbook?										
Refinish/mend furniture?										
Change the car oil?										
Mop the floors?										
Attend school functions?										
Be the family taxi driver?										
Stay home with an ill child?										
Do the income tax report?										

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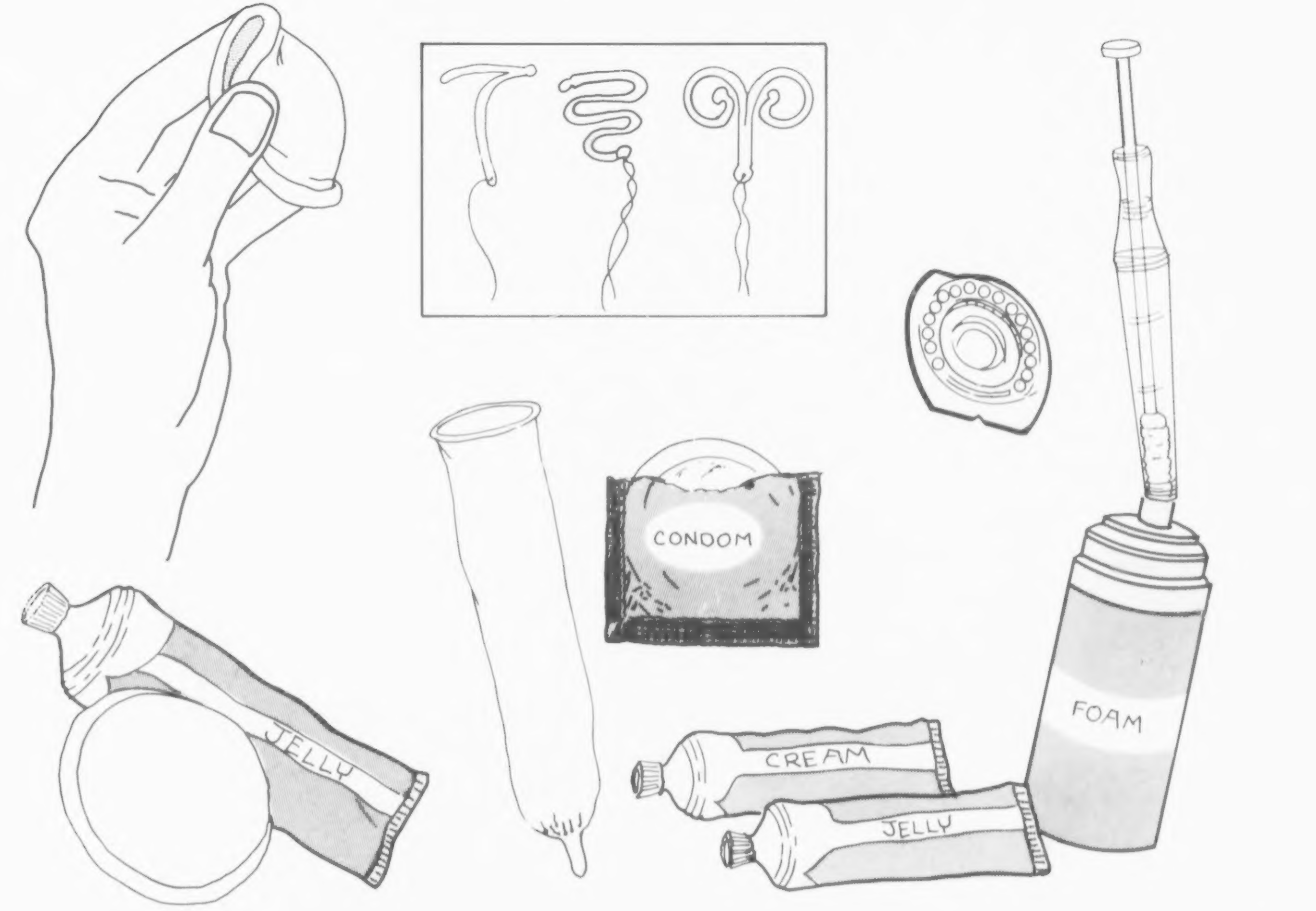
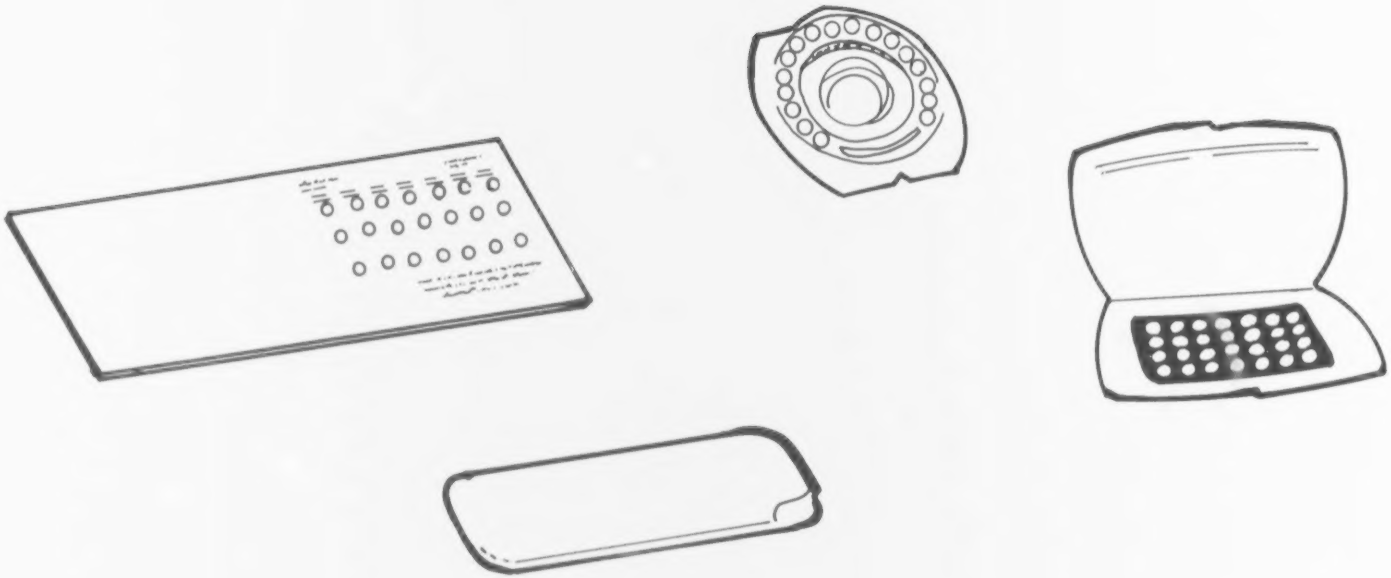
Contraception Methods



The Right Pill



The right pill for your needs must be prescribed. . .

The Right Pill

(Continued)

because not all women are alike.

Taking someone else's pills may mean

getting a dosage that's too high or too low for you.

SOCIAL HEALTH
UNIT III

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheets #1-#6 should not be evaluated by the instructor

Assignment Sheet #7

Part I

A. P
B. E
C. P
D. E
E. S
F. S

Part II should not be evaluated by the instructor

Assignment Sheet #8 and #9 should not be evaluated by the instructor

SOCIAL HEALTH
UNIT III

TEST

NAME ______________________________ SCORE ______________

1. Match to their correct definitions terms associated with social health. Write the correct numbers in the blanks.

______a. Two or more persons who are committed to each other and who share resources, responsibility for decisions, values, and goals

______b. Diseases transmitted primarily through sexual contact; venereal diseases

______c. Physiological or psychological dependence on a drug

______d. Term that recognizes the adult role of minors who are sixteen years old and do not live with their parents; these minors can seek medical care without parental consent

______e. Strong attraction that may begin and end quickly

______f. Use of a drug to the extent that it interferes with health, occupational, or social adjustment

______g. Establishment of close, stable relationships with others

______h. Taking a drug for its intended purpose but not in the appropriate amount, frequency, strength, or manner

______i. Process or technique for the prevention of pregnancy

______j. Feeling of vigor, well-being, or high spirits

1. Drug abuse
2. Intimacy
3. Drug addiction
4. Euphoria
5. Infatuation
6. Family
7. Sexually transmitted diseases
8. Drug misuse
9. Contraception
10. Emancipation of minors

2. List types of family organization.

a. ______________________________ — Mother makes most decisions

b. ______________________________ — Both parents share decisions

c. ______________________________ — Father makes most decisions

TEST

3. Match types of families to their correct descriptions. Write the correct numbers in the blanks.

______a. Several related generations living under one roof

______b. Two parents living together with their child or children

______c. Several families who maintain private living spaces and who at the same time have access to a larger family experience through sharing selected living spaces and certain activities

______d. Several related or nonrelated families living together in one large house or on the same piece of land

______e. Remarried parent and stepparent living with child or children

______f. One parent living with child or children

1. Single-parent
2. Extended
3. Communal
4. Cooperative
5. Blended or reconstituted
6. Nuclear

4. Distinguish between characteristics of love and infatuation. Write an "L" in the blanks before characteristics of love and an "I" in the blanks before characteristics of infatuation. A blank may contain more than one answer.

______a. Engulfing, selfish feelings

______b. Feeling of strong personal attachment

______c. Concern about welfare of other person

______d. Concern for self

______e. No growth; attraction quickly dies

______f. Slow and steady growth

______g. Physical attraction

______h. Commitment

______i. Awareness of other person's faults, but ability to accept them as part of the total personality

______j. Willingness of both partners to give generously of themselves

______k. Overlooking undesirable traits

______l. Unselfishness

______m. Seeking rewards, but giving little in return

______n. Selfishness

TEST

5. Match types of intimate relationships to their correct descriptions. Write the correct numbers in the blanks.

______a. Relationship in which people base their relationship on exchange of words and ideas

______b. Relationship in which people feel comfortable with their mutual closeness and may touch or caress each other

______c. Relationship in which people are able to be completely natural with each other and show their true feelings

1. Emotional intimacy
2. Intellectual intimacy
3. Physical intimacy

6. Match methods of contraception to their correct descriptions. Write the correct numbers in the blanks.

______a. Cover worn over the erect penis to trap semen so that no sperm enter the vagina

______b. Avoiding sex entirely

______c. Device placed within the uterus to prevent fertilized egg from attaching to the uterine wall

______d. Thin rubber cup that fits over the cervix to block the sperm from reaching the egg

______e. Operation for males whereby the tubes that carry the sperm to the penis are cut and tied

______f. Male withdraws his penis before ejaculation

______g. Foam, cream, or jelly that is inserted into the vagina and contains chemicals that immobilize and kill sperm

______h. Synthetic hormones that prevent ovulation or alter the uterine lining so that pregnancy does not occur

______i. Operation for females whereby the Fallopian tubes are tied, cut, or sealed to prevent the egg's traveling through tube to the uterus

______j. Refraining from intercourse during the portion of the female reproductive cycle when the egg is available for fertilization

1. Abstinence
2. Chemical barrier (spermicide)
3. Condom
4. Diaphragm
5. Intrauterine device (IUD)
6. Oral contraceptive (the Pill)
7. Rhythm
8. Tubal ligation
9. Vasectomy
10. Withdrawal

TEST

7. Name responsibilities that accompany the decision to become sexually active. Name at least one responsibility in each category.

   a. To yourself — ______________________________

   ____

   b. To your partner — ______________________________

   ____

   c. To a possible child — ______________________________

   ____

8. Select from the following list consequences related to teenage pregnancies. Write an "X" in the blank before each correct answer.

   ______a. Marriage may be forced to occur at a time not planned

   ______b. Couple may be faced with the overwhelming expenses of having a baby

   ______c. Couple will have more freedom to plan the future

   ______d. Individual goals set by the couple may no longer be attainable

   ______e. A child may be born with birth defects

   ______f. In-law relationships may be marred

   ______g. Couple may retain resentment for each other throughout their married relationship

   ______h. Possibility of child abuse may be increased

   ______i. Relationship between parent and child may be better because they are close in age

   ______j. Educational possibilities may be increased

   ______k. The mother may have to decide whether to raise the child alone or to give it up for adoption

TEST

9. Match to their correct definitions terms associated with sexually transmitted diseases. Write the correct numbers in the blanks.

_____a. Inflammation of the joints

_____b. Wartlike growth

_____c. Blister

_____d. Any infection or inflammation of the membranes covering the brain and spinal cord

_____e. Containing pus

_____f. Laboratory test done on blood serum for evidence of infection

_____g. Hair loss, baldness

_____h. Abnormal condition that affects the endocardium and the heart valves

_____i. A tumorlike mass of granulation tissue, a characteristic of tertiary syphilis

1. Alopecia
2. Gumma
3. Purulent
4. Serology
5. Vesicle
6. Endocarditis
7. Condyloma
8. Arthritis
9. Meningitis

10. Describe briefly the following sexually transmitted diseases by naming two signs or symptoms for each disease *and* by naming the treatment for each disease.

a. Gonorrhea

1) Signs or symptoms — ____

____

2) Treatment — ____

b. Syphilis

1) Signs or symptoms — ____

____

2) Treatment — ____

c. Herpesvirus II

1) Signs or symptoms — ____

____

2) Treatment — ____

TEST

d. AIDS

1) Signs or symptoms — ____________________

____

2) Treatment — ____________________

e. Nonspecific urethritis

1) Signs or symptoms — ____________________

____

2) Treatment — ____________________

11. List the main types of child abuse.

a. ____________________

b. ____________________

c. ____________________

12. List five possible physical results of substance abuse.

a. ____________________

b. ____________________

c. ____________________

d. ____________________

e. ____________________

13. Select from the following list other problems related to substance abuse.

_____a. Chemical abuse increases user's life span

_____b. Certain substances may be illegal to possess

_____c. Price of illegal drugs is controlled by the government

_____d. Drugs are fairly inexpensive for frequent use

_____e. Some users commit crimes to support chemical habit

_____f. Relationships and career may suffer

_____g. Content of illegal drugs is not controlled

_____h. Prescription drugs may be unintentionally misused

TEST

14. Match types and classes of drugs to their correct effects. Write the correct numbers in the blanks.

_____a. Speeds up central nervous system; gives a feeling of increased mental power that often leads to overestimation of power; gives a feeling of euphoria

_____b. Causes both physical and mental reactions; mental changes cannot be predicted; reality and perception are distorted in unusual and unlikely ways

_____c. Acts as a stimulant by speeding heart and breathing rates while at the same time cutting appetite

_____d. Has a calming effect by slowing down body's entire system

_____e. Gives a false feeling of relief from tension; reduces hunger drive and sex drive; tolerance to drug quickly builds

_____f. Acts as a depressant by slowing down body processes such as muscle control; causes slurred speech and stumbling

1. Narcotic
2. Alcohol
3. Depressant
4. Nicotine
5. Hallucinogen
6. Stimulant

SOCIAL HEALTH
UNIT III

ANSWERS TO TEST

1. a. 6
   b. 7
   c. 3
   d. 10
   e. 5
   f. 1
   g. 2
   h. 8
   i. 9
   j. 4

2. a. Matriarchal
   b. Equalitarian
   c. Patriarchal

3. a. 2
   b. 6
   c. 4
   d. 3
   e. 5
   f. 1

4. a. I
   b. L
   c. L
   d. I
   e. I
   f. L
   g. L, I
   h. L
   i. L
   j. L
   k. I
   l. L
   m. I
   n. I

5. a. 2
   b. 3
   c. 1

6. a. 3
   b. 1
   c. 5
   d. 4
   e. 9
   f. 10
   g. 2
   h. 6
   i. 8
   j. 7

7. Answer should include at least one responsibility from each category

   a. 1) Maintain your own moral standards
      2) Do not have intercourse with someone who has a sexually transmitted disease
   b. 1) Do not use sex to "hold" a dating partner or to be popular
      2) Be honest about contraceptive use
      3) Tell your partner if you have a sexually transmitted disease
   c. 1) Be ready to assume the responsibility of pregnancy
      2) Be able to support a child with money and love

ANSWERS TO TEST

8. a, b, d, e, f, g, h, k

9. a. 8
   b. 7
   c. 5
   d. 9
   e. 3
   f. 4
   g. 1
   h. 6
   i. 2

10. (Student answers should include any two of the signs and symptoms listed with each disease.)

   a. 1) *Female* — No symptoms in early stages, menstrual problems, pain as infection spreads upward, sterility
      Male — Burning and pain on urination, yellowish purulent discharge, pain as infection spreads upward, sterility
      2) Antibiotics

   b. 1) *Primary stage* — Painless lesion (chancre) on genitals, nipple, or mouth; positive serology
      Secondary stage — Headache, enlarged lymph nodes, skin rash, (weakness), sore throat, alopecia
      Tertiary stage — Gummas in skin, bone, liver, larynx, and testes; end
      arthritis; meningitis; blindness
      2) Antibiotics in the first two stages, not usually effective in tertiary sta

   c. 1) Fluid-filled vesicles on cervix, genitals; fever; malaise; recurring attac
      2) None

   d. 1) Fatigue, fever, weight loss, swollen glands, loss of appetite, dry cough, persistent diarrhea, extreme susceptibility to diseases, Kaposi's sarcoma, pneumocystis carinii pneumonia
      2) Symptomatic

   e. 1) Burning upon urination, itching, penile or vaginal discharge
      2) Antibiotics

11. a. Physical
    b. Emotional
    c. Sexual

ANSWERS TO TEST

12. Answer should include any five of the following

    a. Death
    b. Serious injury
    c. Physical or mental impairment
    d. Physical or psychological addiction
    e. Birth defects
    f. Increased tolerance for chemical
    g. Unpleasant withdrawal symptoms

13. b, e, f, g, h

14. a. 6
    b. 5
    c. 4
    d. 3
    e. 1
    f. 2

COMMUNITY HEALTH
UNIT IV

SUGGESTED ACTIVITIES

I. Unit contents

   A. Objective sheet

   B. Suggested activities

   C. Supplement #1 — Crossword Puzzle

   D. Information sheet

   E. Assignment sheets

      1. Assignment Sheet #1 — Research Functions of a Health Organization or Agency

      2. Assignment Sheet #2 — Prepare to be a Resource Person

      3. Assignment Sheet #3 — Research a Current National Health Issue

      4. Assignment Sheet #4 — Formulate Solutions to Common Community Health Problems

   F. Answers to assignment sheets

   G. Test

   H. Answers to test

II. Instructor's guide

   A. Order materials to supplement unit.

   (NOTE: Obtain brochures or audiovisual material about the health agencies you have in your community and the services they offer.)

   B. Introduce unit.

   - Explain to the students that there are many more agencies in a community than most people realize, and the services they offer are many and varied.

   - Mention some of the agencies that are not commonly known.

   - Discuss situations that may lead someone to seek help at one of these agencies.

SUGGESTED ACTIVITIES

- Stress that not all people who get government help are on it permanently. Circumstances in any life might necessitate the need for help.
- If you have had a natural disaster in your area, point out what agencies assisted and what type of help they offered.

C. Provide students with unit.

D. Discuss unit and specific objectives.

E. Discuss information and assignment sheets.

1. Use Information Sheet, Section I, to discuss terms and definitions associated with health agencies.
   - Have the students tell you what agencies on the list they are familiar with.
   - Explain what diseases can be immunized against. Discuss the benefits of immunizations. Discuss the impact of the polio vaccine.
   - Discuss how our tax dollars can help the needy.
   - Discuss the role of the FDA in testing drugs, medical devices, and procedures for safety before they are allowed to be used. Point out the advantages and disadvantages of this safety measure.

EXAMPLES: The sedative and hypnotic compound thalidomide was prematurely released in the 1960s. Many women who took this drug to combat the morning sickness of early pregnancy had babies who were born with malformed limbs.

Laetrile, a substance derived from apricot pits, is reputed to stop the growth of cancer cells. The drug is currently under investigation by the FDA and is not available to cancer patients in the United States. Many people, however, cross the southern border to purchase Laetrile in Mexico.

An artificial heart has been developed that supposedly overcomes some of the problems inherent in the Jarvik-7 and other models of artificial hearts. Patient X must have an artificial heart to keep him alive until such time as he can receive a human heart transplant. He cannot survive on his own until a donor heart is located, but the FDA has not approved the new model of artificial heart.

SUGGESTED ACTIVITIES

- Ask the students how they think medications may be tampered with while on store shelves, e.g., the Tylenol cases. Brainstorm about ways such tampering can be prevented.
- Discuss the role of official and voluntary organizations.
- Mention the United Way and the agencies funded through this program.
- Set up a panel discussion with representatives of different health agencies to discuss the functions of their organizations.
- Arrange for your students to tour the local health department.
- Point out the national campaigns that some of the voluntary societies have done, e.g., American Heart Association and diet, American Cancer Society and the danger symptoms of cancer, American Lung Association and the stop-smoking ads.

2. Use Information Sheet, Section II, to discuss services provided through family planning groups.
    - Discuss the necessity for these groups.
    - Stress that contraception is much preferable to abortion or an unwanted pregnancy.
    - Try to present an unbiased opinion on the subject of abortion.
    - Have the students discuss how they feel about contraception/birth control.
    - Point out that many people are better off by reducing the number of children in the family unit. If there were no form of birth control, people would still have large families and may live under the poverty level.
    - Stess that family planning groups do not take sides on the abortion issue, but are there to serve the individual.
3. Use Information Sheet, Section III, to discuss services offered through a guidance clinic.
    - Point out that these clinics can really help people who feel they need help and have nowhere else to turn.
    - Discuss aspects of the different types of counseling available, and discuss who might need it.
    - Stress that people who need some psychiatric counseling are not crazy. Given enough stress, anyone can have psychological problems.
    - Differentiate between the blues and severe depression.

SUGGESTED ACTIVITIES

- Have the students complete Assignment Sheets #1-#3 to research health agencies and issues.
- Have students share their information from Assignment Sheet #3, using group or panel discussions, posters, or bulletin boards.

4. Use Information Sheet, Section IV, to discuss common health problems that can occur in every community.

    - Discuss water and food controls.
    - Give the students the following situations and ask what they would do.

        You are standing in line at a fast-food restaurant. You notice that the cook handles all the food with his hands, then wipes them on his pants.

        You are eating out in a restaurant. You leave the table to go to the restroom, which has a sign stating that all employees must wash their hands before returning to work; but there are no towels or soap.

        While waiting to order at a restaurant, you watch the attendant at the salad bar adding bowls of fruit. Suddenly the attendant sneezes without turning her head away from the food or covering her mouth.

    - Discuss ways that car manufacturers are trying to reduce air pollution. Ask the students what other types of pollution controls they are aware of.
    - Take the students on a field trip to the local water treatment plant and the sewage processing plant.
    - Invite a sanitarian to the class as a guest speaker to discuss the role and responsibilities of a sanitarian.
    - Find out what hazardous wastes are a problem in your community and what is being done to control the disposal of these wastes.
    - Reinforce the problems and dangers of chemical abuse. Have the students think of ways it can be reduced or controlled.
    - Review what actions to take in the event of a natural disaster and what agencies can help.
    - Discuss crime prevention in your community. Mention neighborhood watch groups and crime stoppers.
    - Discuss the possibility of taking one of these topics for the community competition in HOSA.
    - Have the students complete Assignment Sheet #4 and the crossword puzzle to reinforce this unit.
    - Send some of the outstanding solutions from Assignment Sheet #4 to community and state leaders.

SUGGESTED ACTIVITIES

F. Give test.

G. Reteach and retest if necessary.

H. Complete appropriate section of students' competency profiles.

III. Unit references

A. Ingalls, Joy and Constance Salerno. *Maternal and Child Health Nursing*. 5th ed. St. Louis: C.V. Mosby, 1983.

B. Sloan, Jamee Reid. *Health Service Careers*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1979.

COMMUNITY HEALTH
UNIT IV

SUPPLEMENT #1 — CROSSWORD PUZZLE

Use the clues below to work the puzzle on the next page.

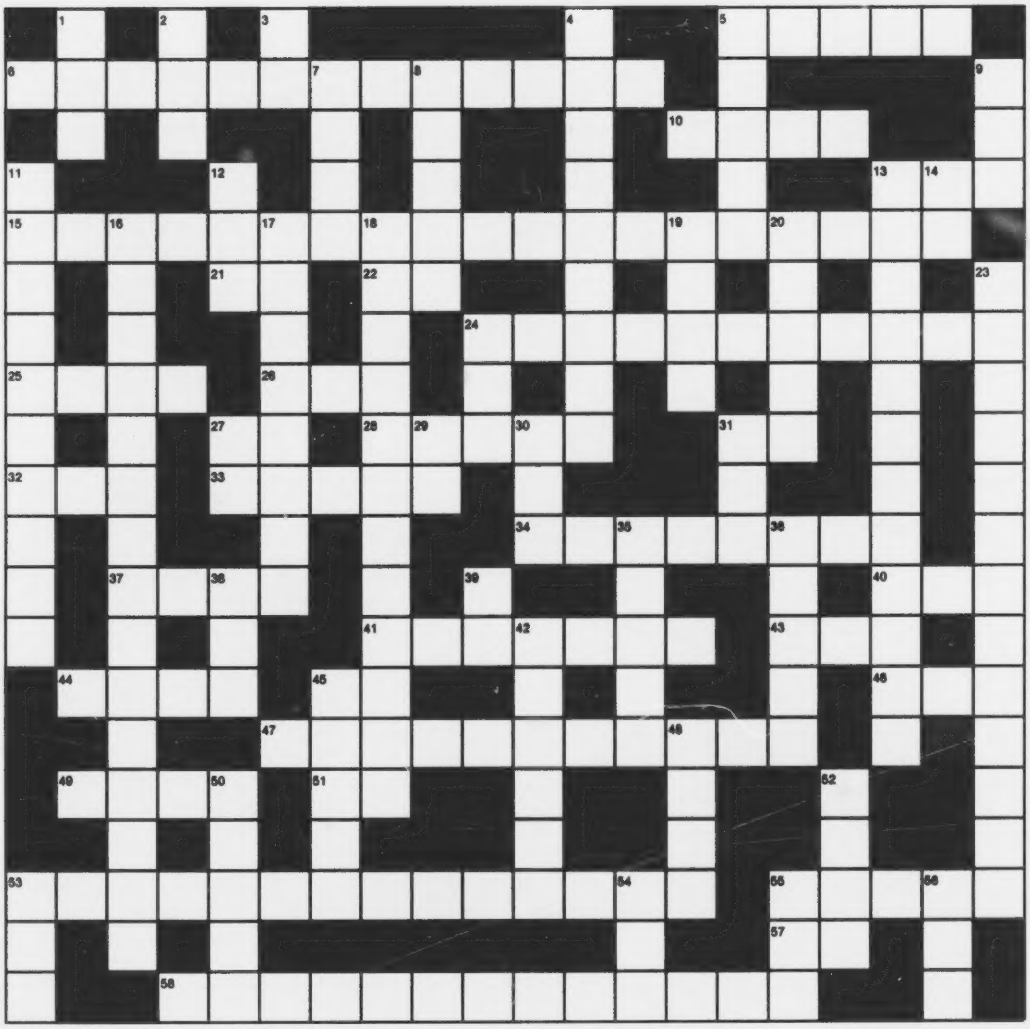
ACROSS

5. Poisonous
6. Birth control
10. Questions
13. Opaque matter at site of an infection
15. Group to help alcoholics (2 wds)
21. Relating to
22. I
24. Department that provides health education materials (2 wds)
25. Not wild
26. Intensive Care Unit (abbr)
27. Alternating Current (abbr)
28. Loud
31. I am, he ____
32. Usual number of fingers
33. Shy
34. Government health insurance plan to help people sixty-five and older
37. Opposite of *short*
40. American Heart Association (abbr)
41. Treatment
43. Sick
44. Sexual assault
45. Spanish *yes*
46. Brewed beverage
47. ________ Administration, abbreviated FDA (3 wds)
49. Exam
51. Registered Nurse (abbr)
53. National system to provide health, retirement, survivor's, and disability insurance (2 wds)
55. Unlawful act
57. You are, I ____
58. Operation to prevent pregnancy

DOWN

1. Collapsible bed
2. Eyelid infection
3. Alcoholics Anonymous (abbr)
4. Type of private agency
5. Delicious
7. Not hot
8. Cost
9. Distress signal
11. Common community health problem
12. World Health Organization (abbr)
13. Agency that provides programs for research and gives grants to states for health services (2 wds)
14. We
16. Local organization (2 wds)
17. Type of public agency
18. Method of protecting a person from certain infectious diseases
19. Opposite of *yes* (plural)
20. Greets
23. Misuse of drugs, alcohol, caffeine, or nicotine (2 wds)
24. To glide over snow
27. In, on, or near
29. Overdose (abbr)
30. Total
31. Incorporated (abbr)
35. Drugged
36. Becoming older
38. Tell a falsehood
39. Us
42. Prince of Monaco
45. Arranges according to categories
48. Depend
50. Characteristic
52. Agricultural establishment
53. Boy child
54. Young child
55. Is able
56. Human male

SUPPLEMENT #1



SUPPLEMENT #1

	1 C		2 S		3 A						4 V			5 T	O	X	I	C	
6 C	O	N	T	R	A	7 C	E	8 P	T	I	O	N		A					9 S
	T		Y			O		R			L		10 A	S	K	S			O
11 S				12 W		O		I			U			T			13 P	14 U	S
15 A	L	16 C	O	H	17 O	L	18 I	C	S	A	N	O	19 N	Y	20 M	O	U	S	
N		O		21 O	F		22 M	E			T		O		E		B		23 C
I		M			F		M		24 S	T	A	T	E	H	E	A	L	T	H
25 T	A	M	E		26 I	C	U		K		R		S		T		I		E
A		U		27 A	C		28 N	29 O	I	30 S	Y			31 I	S		C		M
32 T	E	N		33 T	I	M	I	D		U				N			H		I
I		I			A		Z			34 M	E	35 D	I	C	36 A	R	E		C
O		37 T	A	38 L	L		A		39 W			O			G		40 A	H	A
N		Y		I			41 T	H	E	42 R	A	P	Y		43 I	L	L		L
	44 R	A	P	E		45 S	I			A		E			N		46 T	E	A
		G			47 F	O	O	D	A	N	D	D	48 R	U	G		H		B
	49 T	E	S	50 T		51 R	N			I			E			52 F			U
		N		R		T				E			L			A			S
53 S	O	C	I	A	L	S	E	C	U	R	I	54 T	Y		55 C	R	I	56 M	E
O		Y		I								O			57 A	M		A	
N			58 S	T	E	R	I	L	I	Z	A	T	I	O	N			N	

COMMUNITY HEALTH
UNIT IV

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

Part I — Evaluated to the satisfaction of the instructor

Part II — Answers should include any three in each category (These are suggested answers)

A. Tuberculosis control
    Skin test for food handlers and suspected cases
    Chest x ray
    Sputum examination
    Drugs dispensed for treatment
    Follow-up contacts
    Health education
    Counseling
    Literature
  Venereal disease control
    Screening and treatment
    Follow-up of contacts
    Premarital blood test
    Health education

B. Annual physical exams
  Counseling
  Referrals
  Home visits

C. Immunizations
    Tetanus
    Whooping cough
    Diphtheria
    Mumps
    Polio
    Measles
    Rubella

D. Physical assessment
  Weight control counseling
  Pregnancy testing
  Birth control services
  Counseling for depression, family problems
  Venereal disease treatment
  Chemical counseling

ANSWERS TO ASSIGNMENT SHEETS

E. Screening for anemia
Measurement of growth and development
Counseling on nutrition, safety, and child care
Films and literature
Food vouchers
Referral and follow-up

F. Physical assessment
Measurement of growth and development
Blood testing for anemia
Vision and hearing testing
Urine testing for diabetes and infections
Counseling

G. Any components of the following
Water quality service
Air quality service
Consumer protection service
Solid-waste management
General sanitation service

H. Psychological, social, speech and language and hearing evaluations
Referral
Treatment

I. Dressing change
Ostomy care
Catheter insertion care
Diet education
Support of the patient and family
Reports to private physician

Assignment Sheet #2 — Evaluated to the satisfaction of the instructor

Assignment Sheet #3 — Evaluated to the satisfaction of the instructor

Assignment Sheet #4

Part I — Evaluated to the satisfaction of the instructor

Part II — Completed to the satisfaction of the instructor

COMMUNITY HEALTH
UNIT IV

TEST

NAME ____ SCORE ________________

1. Match to their correct definitions terms associated with health agencies. Write the correct numbers in the blanks. Definitions are continued on the next page.

_____a. Government health insurance plan to aid people sixty-five or older

_____b. National system to provide health, retirement, survivor's and disability insurance that covers all people who work for a living outside the home

_____c. Agency that administers and enforces many acts that promote purity and truthful, informative labeling of consumer products

_____d. Voluntary organization made up of former alcoholics who help other alcoholics to help themselves

_____e. Agency that provides health education materials, including films, pamphlets, books, and folders on various health subjects

_____f. Method that protects a person from certain communicable diseases

_____g. Agency that provides many community services such as immunizations, communicable disease reports, public health nursing, health education, environmental sanitation, and maternal and child health services

_____h. Division of Health and Human Services, organized to set up programs to aid handicapped and disabled individuals

_____i. Special agency of the United Nations that works throughout the world to raise health standards

_____j. Organization that educates the public and supports facilities for the detection, diagnosis, and treatment of cancer

_____k. Can be passed from one person to another by direct or indirect contact

1. State health department
2. Social Security System
3. Social and Rehabilitation Services
4. Food and Drug Administration (FDA)
5. Immunization
6. Communicable
7. Alcoholics Anonymous
8. Local health department
9. American Cancer Society
10. Medicare
11. World Health Organization (WHO)

TEST

______l. Agencies supported through public funds from government taxes and administered by appointees of the federal, state, or local government

______m. Official federal agency that sets up and directs programs to help improve the conditions of life for each individual

______n. Agency that provides programs for research and gives grants to states for health services, provides training programs to improve health in local communities, and offers medical and psychiatric examinations

______o. Organizations that receive support from sources such as United Way, donations, gifts, endowments, membership fees, and sometimes public funds

12. Voluntary/private health agencies
13. Public Health Service
14. Official/public agencies
15. Department of Health and Human Services

2. Select from the following list services provided through family planning groups. Write an "X" in the blank before each correct answer.

______a. Psychiatric examinations

______b. Physical examinations

______c. Immediate sterilization

______d. Home delivery

______e. Social services counseling

______f. Contraception/birth control counseling

______g. Referrals for sterilization

______h. Genetic counseling

3. Select from the following list services offered through a guidance clinic. Write an "X" in the blank before each correct answer.

______a. Individual counseling

______b. Financial planning

______c. Workshops for disabled individuals only

______d. Family counseling

______e. Group therapy

______f. Medical services

______g. Immunization for children

______h. Marriage counseling

______i. Psychiatric testing

TEST

4. Name common health problems that can occur in every community.

   a. ______________________________

   b. ______________________________

   c. ______________________________

   d. ______________________________

   e. ______________________________

   f. ______________________________

(NOTE: Test items 5-7 list assignment sheets. They are an important part of this test. If they have not been completed, check with your instructor.)

5. Research functions of a health organization or agency.

6. Research a current national health issue.

7. Formulate solutions to common community health problems.

COMMUNITY HEALTH
UNIT IV

ANSWERS TO TEST

1. a. 10
   b. 2
   c. 4
   d. 7
   e. 1
   f. 5
   g. 8
   h. 3
   i. 11
   j. 9
   k. 6
   l. 14
   m. 15
   n. 13
   o. 12

2. b, e, f, g, h

3. a, d, e, h, i

4. a. Poor sanitation
   b. Pollution
   c. Natural disasters
   d. Chemical abuse
   e. Crime
   f. Teenage pregnancy

5. Evaluated to the satisfaction of the instructor

6. Evaluated to the satisfaction of the instructor

7. Evaluated to the satisfaction of the instructor

SAFETY AND BASIC FIRST AID
UNIT V

SUGGESTED ACTIVITIES

I. Unit contents

   A. Objective sheet

   B. Suggested activities

   C. Supplements

      1. Supplement #1 — Crossword Puzzle

      2. Supplement #2 — General Directions for Giving First Aid

      3. Supplement #3 — How to Beat the Heat

   D. Transparency masters

      1. TM #1 — Types of Fire Extinguishers

      2. TM #2 — Standard Letter Symbols for Fire Extinguishers

      3. TM #3 — New Pictorial Symbols Used to Label Fire Extinguishers

      4. TM #4 — Fire Extinguisher Suitable for Class B and Class C Fires

      5. TM #5 — Brachial Pressure Point

      6. TM #6 — Femoral Pressure Point

      7. TM #7 — Face and Skin Conditions in Heat Stroke and Exhaustion

   E. Information sheet

   F. Assignment sheets

      1. Assignment Sheet #1 — Identify Safety Violations

      2. Assignment Sheet #2 — Determine Priority of Care in an Emergency Situation

   G. Answers to assignment sheets

   H. Job Sheet #1 — Perform First Aid Treatment for Simulated Accident Victims

   I. Test

   J. Answers to test

SUGGESTED ACTIVITIES

II. Instructor's guide

(NOTE: The skills in this unit need to be taught by a certified first aid/CPR instructor. If you are not a certified instructor, we highly recommend that you become certified before teaching "Safety and Basic First Aid." Contact your local Red Cross office for a certification course or to arrange for one of their instructors to teach this unit for you if you cannot become certified in time to teach it yourself.)

A. Order materials to supplement unit.

1. Films

(NOTE: These films are available on a free-loan basis to Oklahoma instructors. Oklahoma teachers may order from the State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, Film Library, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364. Out-of state teachers must order from the address listed with the films.)

a. *First Aid and Safety.* 16 minutes, 1978. Available from Churchill Films, 622 N. Robertson Boulevard, Los Angeles, California 90069. This film follows Red Cross recommendations of first aid treatment for poison emergencies.

b. *Patient Safety I.* 22 minutes, 1979. Available from Films Inc., 733 Green Bay Road, Wilmette, Illinois 60091. *Patient Safety I* illustates how to prevent accidental injuries to patients in and around their rooms from falls, burns, shocks, and error.

c. *Patient Safety II.* 14 minutes, 1979. Available from Films Inc., 733 Green Bay Road, Wilmette, Illinois 60091. *Patient Safety II* teaches nursing staff how to prevent accidental injuries to patients while they are ambulatory, on crutches, or in a wheelchair.

2. Safety and first aid pamphlets available from local office of the American Red Cross and the American Heart Association

3. Transparencies and competency profiles

(NOTE: Transparencies and competency profiles for this manual are available from Curriculum and Instructional Materials Center, Oklahoma State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

B. Introduce unit.

- Point out the benefits if everyone were able to perform basic first aid.
- Discuss possible situations where first aid may be needed.
- Explain that all students in a health profession are expected to be proficient in first aid even if their chosen occupations have no direct patient contact.

SUGGESTED ACTIVITIES

- Stress *prevention* rather than the treatment or cure.

  EXAMPLES: Safe storage of poisons, supervision of young children, safety awareness

- Discuss the Good Samaritan Act and how it protects first aiders.

C. Provide students with unit.

D. Discuss unit and specific objectives.

E. Discuss information sheets, assignment sheets, and job sheet.

1. Use Information Sheet, Section I, to discuss terms and definitions associated with safety.
   - Point out the gases that are used in different health occupations and that need to be treated with care.
   - Stress that when students are dealing with chemicals, they need to be aware if they are flammable, combustible, etc.
   - Discuss how safety is everyone's concern.
2. Use Information Sheet, Section II, to discuss general safety rules.
   - Explain that most safety measures are common sense. Stress that safety should be taken into consideration at all times.
   - Stress that every institution or business has policies on disasters and fires and that every worker should become familiar with those policies.
   - Develop your own set of safety-violation slides. Have the students evaluate the slides for safety violations as practice for HOSA competitive events.
3. Use Information Sheet, Section III, to discuss classes of fire.
   - Color the background of the letter symbols in Transparency #2 so that the backgrounds will be the color indicated above each letter.
   - Use Transparencies #1 through #4 to discuss classes of fires and types of fire extinguishers. Stress the importance of knowing the different classes of fire and the correct type of fire extinguishers to use for each class.
   - Have a representative from the fire department give a talk on fire safety and prevention.
   - Have the students locate and read the labels on each of the fire extinguishers in the school and at their clinical locations.
   - Have a representative from the fire department demonstrate the use of fire extinguishers.
   - Explain the procedure for fire in your school, and have the students find out the procedures they are to follow at their clinical locations.

SUGGESTED ACTIVITIES

4. Use Information Sheet, Sections IV and V, to discuss terms and definitions associated with first aid and to discuss types of injuries.

   - Explain the importance of correct medical terminology in describing an injury.
   - Show examples of the terms if possible; show the rest by using pictures from a medical book.
   - Invite a paramedic or EMT to discuss first aid procedures and to show the students some of the equipment.
   - HAVE A CERTIFIED INSTRUCTOR TEACH THE TECHNIQUES OF BASIC FIRST AID AND CPR.
   - Use Supplement #2 for general directions for giving first aid. Stress the importance of having emergency phone numbers readily available; in an emergency, the time spent having to look up numbers may be critical.

5. Use Information Sheet, Section VI, to discuss first aid actions to follow in an emergency.

   - Go through the steps and explain the reason for their order.
   - Explain the need to establish priorities.

6. Use Information Sheet, Section VII, to discuss pressure points.

   - Show Transparencies #5 and #6.
   - Remind students that pressure points are used *only* when bleeding cannot be controlled by direct pressure.
   - Relate incidents from your experience or give case studies to illustrate the importance of controlling bleeding by direct pressure.
   - Remind students that bleeding victims should be observed for signs of traumatic shock and treated accordingly.
   - Explain the difference between arterial and venous bleeding; *arterial bleeding* is bright red and spurts or flows intermittently; *venous bleeding* is dark red and flows continuously. Immediate steps must be taken to stop arterial blood flow, as this is a life-threatening situation. Often, even heavy pressure to a pressure point is ineffective in stopping arterial bleeding. In such cases, the severed artery must be found and pinched closed with the fingers. Direct pressure is usually effective in controlling venous bleeding.
   - Demonstrate the steps for controlling bleeding by direct pressure as outlined in Job Sheet #1. Have students practice applying pressure to simulated bleeding (both arterial and venous) on various parts of the body by completing the appropriate section of Job Sheet #1.

SUGGESTED ACTIVITIES

- Caution students that tourniquets are used ONLY as a last resort. Explain that while a tourniquet may be necessary to save a person's life, it cuts off circulation and may cost the victim his or her limb. Stress that if a tourniquet must be used, the victim must be seen by a physician as soon as possible and a note must be attached to the victim with the time of tourniquet application noted.

- Explain what to do if a victim has severed a finger, hand, or limb. Tell students that bleeding should be controlled by applying pressure to the correct pressure point, and that the severed appendage should be wrapped in a clean cloth or placed in a clean plastic bag and be transported to the hospital with the victim. If possible, the appendage should also be kept cool with ice; but the ice must not be allowed to touch the appendage directly.

7. Use Information Sheet, Section VIII, to discuss symptoms of burns.

    - Stress that immediate care of a burn victim may be the deciding factor in the severity of the injury.

    - Point out common burn situations and how they can be prevented.

    - Discuss treatment versus home remedies.

8. Use Information Sheet, Section IX, to discuss guidelines for administering first aid to a victim with an eye injury.

    - Stress that improper care of an eye injury can cause permanent loss of sight.

    - Point out that immediate care of an eye injury can reduce the possibility of blindness.

    - Tell the students: **if in doubt, contact a doctor immediately**.

9. Use Information Sheet, Sections X and XI, to discuss signs and symptoms of fractures and the treatment for suspected fractures.

    - Discuss the differences between open and closed fractures, both in treatment and signs and symptoms.

    - Remind students that when they cannot tell whether a person is suffering from a fracture or a sprain, they should always assume that the injury is a fracture and treat it as such.

    - Invite a member of the local Red Cross chapter to demonstrate different types of splints and splinting techniques. Have this person also demonstrate correct procedures for immobilizing a person with a suspected neck or back fracture.

SUGGESTED ACTIVITIES

10. Use Information Sheet, Sections XII and XIII, to discuss the symptoms and first aid treatment for shock.

    - State that shock may be present in any injury and that the victim should always be evaluated for shock.

    - Stress that shock can be life-threatening unless treated.

11. Use Information Sheet, Sections XIV and XV, to discuss prevention of heat stroke, heat exhaustion, and heat cramps.

    - Use Transparency #7 to illustrate your discussion.

    - Give copies of Supplement #3, How To Beat The Heat.

    - Stress prevention of these conditions, especially in hot climates.

    - Discuss summer safety while working or playing outside on hot days.

    - Point out occupations in which these conditions would be more likely to happen.

    - Discuss the prevention of dehydration.

12. Use Information Sheet, Sections XVI and XVII, to discuss frostbite.

    - Stress prevention in the forms of wearing clothing appropriate for the weather and carrying blankets in the car while traveling in cold weather.

    - Discuss how to detect frostbite to prevent permanent damage.

    - Review the principles of the treatment of frostbite.

13. Have the students complete Assignment Sheets #1 and #2 to determine priority of care, and hazards in the environment. Discuss the assignment sheets in class.

14. Have students complete Supplement #1 to reinforce terms in the unit.

15. After the students have completed the certification course, have them complete Job Sheet #1, Perform First Aid Procedures for Simulated Accident Victims.

    - Invite a paramedic to assist with the simulations.

    - Have the students treat simulated injuries as if they were actual injuries.

F. Give test.

G. Reteach and retest if necessary.

H. Complete appropriate section of competency profiles.

SUGGESTED ACTIVITIES

III. Unit references

A. American Red Cross. *Standard First Aid and Personal Safety*, 2nd ed. Garden City, New York: Doubleday & Company, Inc., 1979.

B. *Emergency Care and Transportation of the Sick and Injured*, 4th ed. Chicago, Illinois: American Academy of Orthopaedic Surgeons, 1987.

C. Hendrix, Laborn J. "Bud". *Fundamentals of Carpentry*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center and The Associated General Contractors of America, 1985.

D. Sloan, Jamee Reid. *Health Service Careers*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1979.

SAFETY AND BASIC FIRST AID
UNIT V

SUPPLEMENT #1 — CROSSWORD PUZZLE

Test yourself on safety and first-aid terminology by using the clues below to complete the following crossword puzzle. Clue 57 Down has been done for you.

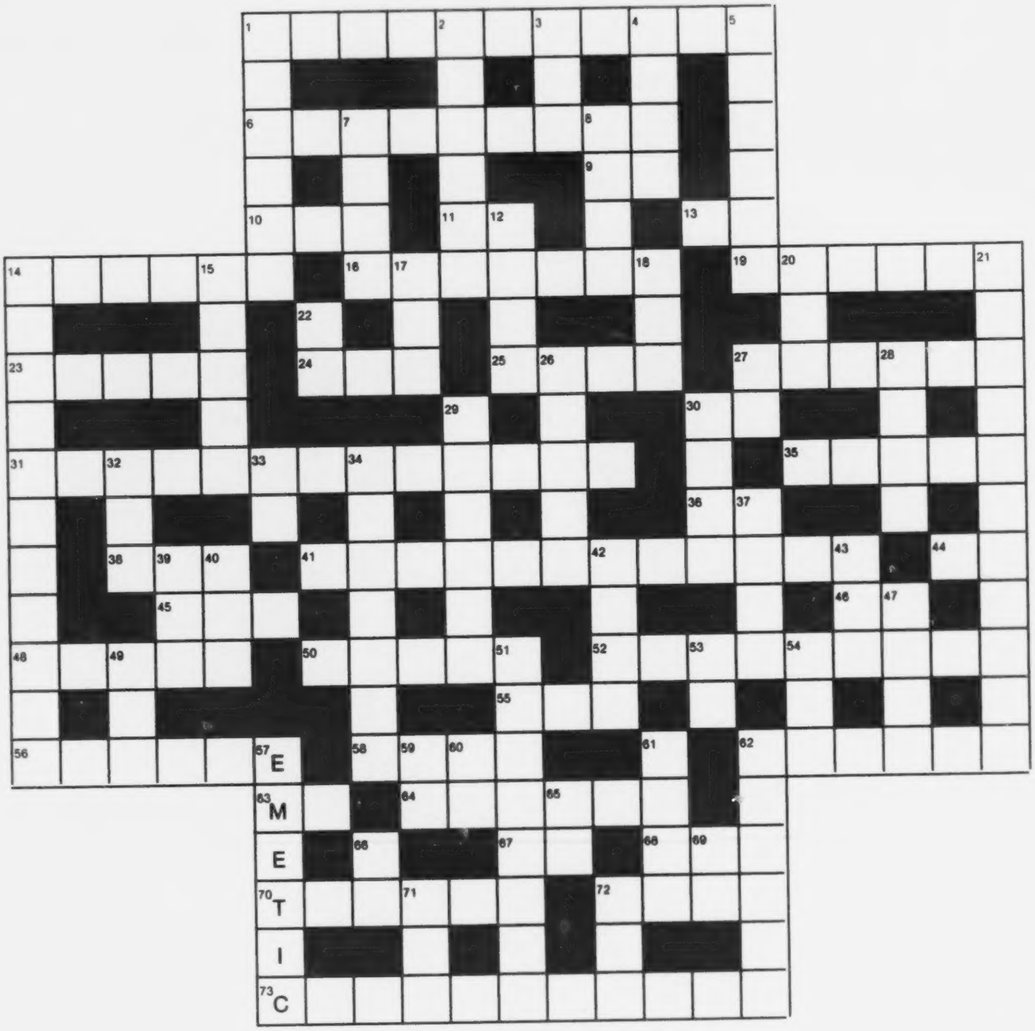
ACROSS

1. Guidelines for job safety (2 wds)
6. Suddenly occurring unintentional events that cause injury or property damage
9. Exists
10. Long, thin fish
11. Northwest Territories (abbr)
13. Atop
14. Source of danger
16. Intensity indicators for first-, second-, and third-
19. Muscular organ in mouth
23. Combustible substance in Class D fire
24. Cardiopulmonary resuscitation (abbr)
25. Fracture associated with open wound
27. Explode; burst violently (2 wds)
30. “To be or not to . . .”
31. Act of reviving a person by bringing person back to full consciousness
35. Television image
36. Route (abbr)
38. To put on
41. Negligence; failure to think before one acts
44. Rhode Island (abbr)
45. Word of negation
46. Pennsylvania (abbr)
48. Federal safety color designating location of first-aid equipment
50. Indication of fire
52. Capable of being easily ignited
55. Untruth
56. Life-threatening disorder caused by prolonged exposure to intense heat
58. Tender; painful
62. Freedom from danger, risk, or injury
63. Physician's degree
64. Resuscitate
67. Article
68. Health resort with mineral springs
70. Complaint of victim in shock from hemorrhage
72. Wound made by piercing with a sharp instrument
73. Capable of bursting into flames

DOWN

1. What all metal containers for flammable materials should be
2. “Good ——s to all”
3. The worst thing to do if your clothing or hair catches fire
4. Shock can be caused by — of blood
5. Device to prevent fractured bones and adjacent joints from moving
7. Water temperature for treatment of second-degree burn
8. To become in need of rest; to become weary
12. Group of three
14. Heavy losses of blood
15. Guidelines
17. Organ of hearing
18. Cause of 56 Across
20. Flammable liquid
21. Violently and loudly
22. Master of ceremonies (abbr)
26. What one should never do to an open fracture
27. To exist
28. Broad
29. Long, thin mark of different color than surrounding area
30. Injury caused by contact with heat, steam, electricity, or flame
32. Unhappy
33. Cubic centimeter (abbr)
34. Bodily injuries, wounds, or shocks
37. Group that works together toward a common goal
39. Unit
40. Prefix meaning *not*
42. Free of danger; secure
43. Identical twin of 68 Across
47. Capable
49. Ever (poetic)
51. Raises, as for an injured or bleeding limb
53. Fire extinguisher to use on flammable liquids and ordinary combustibles
54. Actress Farrow
57. Substance used to cause vomiting of some poisons
59. Either, —; neither, nor
60. Prefix meaning *again*
61. Inactivity after work or exertion
62. Not changing
65. Within; inside
66. Prefix meaning *two*
69. Father (slang)
71. Action that eases heat cramps
72. Science fiction; —fi

SUPPLEMENT #1



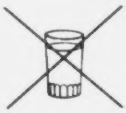
SUPPLEMENT #1

					1 S	A	F	E	2 T	Y	3 R	U	4 L	E	5 S					
					E	■	■	■	I	■	U	■	O	■	P					
					6 A	C	7 C	I	D	E	N	8 T	S	■	L					
					L	■	O	■	I	■	■	9 I	S	■	I					
					10 E	E	L	■	11 N	12 T	■	R	■	13 O	N					
14 H	A	Z	A	15 R	D	■	16 D	17 E	G	R	E	E	18 S	■	19 T	20 O	N	G	U	21 E
E	■	■	■	U	■	22 M	■	A	■	I	■	■	U	■	■	I	■	■	■	X
23 M	E	T	A	L	■	24 C	P	R	■	25 O	26 P	E	N	■	27 B	L	O	28 W	U	P
O	■	■	■	E	■	■	■	■	29 S	■	R	■	■	30 B	E	■	■	I	■	L
31 R	E	32 S	U	S	33 C	I	34 T	A	T	I	O	N	■	U	■	35 V	I	D	E	O
R	■	A	■	■	C	■	R	■	R	■	B	■	■	36 R	37 T	■	■	E	■	S
H	■	38 D	39 O	40 N	■	41 C	A	R	E	L	E	42 S	S	N	E	S	43 S	■	44 R	I
A	■	■	45 N	O	T	■	U	■	A	■	■	A	■	■	A	■	46 P	47 A	■	V
48 G	R	49 E	E	N	■	50 S	M	O	K	51 E	■	52 F	L	53 A	M	54 M	A	B	L	E
E	■	E	■	■	■	■	A	■	■	55 L	I	E	■	B	■	I	■	L	■	L
56 S	T	R	O	K	57 E	■	58 S	59 O	60 R	E	■	■	61 R	■	62 S	A	F	E	T	Y
					63 M	D	■	64 R	E	V	65 I	V	E	■	T					
					E	■	66 B	■	■	67 A	N	■	68 S	69 P	A					
					70 T	H	I	71 R	S	T	■	72 S	T	A	B					
					I	■	■	U	■	E	■	C	■	■	L					
					73 C	O	M	B	U	S	T	I	B	L	E					

SAFETY AND BASIC FIRST AID
UNIT V

SUPPLEMENT #2 — GENERAL DIRECTIONS FOR GIVING FIRST AID

American
Red Cross

Keep the injured person lying down. **Do not give liquids to an unconscious person.**  **Restart breathing with mouth-to-mouth artificial respiration.** **Control bleeding by pressing on the wound.**

Dilute swallowed poisons **and call the Poison Control Center. Keep broken bones from moving.** **Cover burns with thick layers of cloth.** **Keep heart-attack cases quiet and give cardiopulmonary resuscitation (CPR) if it is necessary** **and if you have been trained. Keep a fainting victim lying flat.**

For eye injuries, pad and bandage both eyes. **Always call a doctor.**

For more information about these and other lifesaving techniques, contact your Red Cross chapter.

American Red Cross Poster

SUPPLEMENT #2

Emergency Telephone Numbers

Rescue Squad ____________________

Fire Department ____________________

Police ____________________

Physician ____________________

Hospital Emergency Room ____________________

Poison Control Center ____________________

Additional Numbers ____________________

When you call for emergency help, tell:

1. WHERE the emergency situation is, with cross streets if possible.
2. TELEPHONE NUMBER you are calling from.
3. WHAT HAPPENED—heart attack, auto accident, fall, etc.
4. HOW MANY persons need help.
5. WHAT is being done for the victims.

NOTE: YOU HANG UP LAST. Let the person you called hang up first.

Record and post emergency telephone numbers in advance so that they will be readily available when you need them.

The programs of the American Red Cross are made possible by the voluntary services and financial support of the American people.

Poster 1023-A
Rev. Mar. 1983

American Red Cross poster

SAFETY AND BASIC FIRST AID
UNIT V

SUPPLEMENT #3 — HOW TO BEAT THE HEAT

HOW TO BEAT THE HEAT

Reactions to hot weather vary with a person's age, general physical condition, and activity level. Older people, small children and very active young people are the most likely to suffer from heat illness.

The human body is capable of adapting itself to varying temperature conditions, but the combined effect of heat and heavy physical exertion may be too much for the body's natural temperature regulator. Heat can make some people sick, and in some cases, it can kill.

Here's what happens. The body itself produces metabolic heat — more heat when you're working or playing than when resting. Outdoors on a sunny day, radiant energy adds heat to the body. If the air is warmer than the body temperature, more heat may be added.

The body's heat regulation system tries to maintain a fairly constant temperature of about 98°F. To cool the body, the heart pumps blood out to the extremities—arms and legs—where the heat is dispersed. Another way the body eliminates heat is through the cooling evaporation of sweat. A cool breeze and low humidity help body cooling. High humidity interferes with sweating and adds to discomfort.

Some of the more common forms of heat illness are as follows:

HEAT SYNCOPY OR HEAT FAINTING

This is common among people who are not acclimated to hot weather. It normally occurs soon after someone goes out into the heat to work or exercise. The blood pressure falls suddenly as blood flows to the extremities to cool the body and not enough goes to the head. The person feels giddy, light-headed and then passes out. The best first aid is to have the person lie down to rest and elevate the feet.

HEAT CRAMPS

These muscular cramps result from exposure to high temperatures for a relatively long period of time, coupled with physical exertion. Heavy sweating and dehydration usually precede the cramps.

HEAT EXHAUSTION

This occurs after some hours in the sun and is related to loss of water and salt through sweating without sufficient fluid replacement. Common symptoms include a subnormal body temperature; pallor; dizziness; profuse sweating; cool, moist skin; nausea and headaches. The best first aid is to have the person rest in a cool place and drink water or fruit juice. If the person doesn't feel better in an hour or two or can't hold liquids, take him/her to a hospital emergency room.

HEAT STROKE

This condition can prove to be fatal, so immediate medical attention is necessary. It is caused by a complete breakdown of the body's heat regulating system, with heat production exceeding heat loss. Common symptoms include hot, dry skin, little or no sweating, severe headache, visual disturbance, rapid temperature rise, loss of consciousness, flushed face, weakness and confusion.

First aid treatment should be aimed at cooling the body quickly and getting the victim to the hospital. Remove the person from the source of heat, loosen the clothing, and try to cool the body as rapidly as possible, using a cool bath or cold compresses. Don't give water to a heat stroke victim.

So when the temperatures begin to soar upward, take a few precautions to minimize your body's level of heat stress:

- Try to take frequent rest periods.
- Space heavier workloads or workouts throughout the day, rather than concentrating them in a few consecutive hours.
- Avoid heavy activity during the hottest part of the day.
- Drink plenty of water or other fluids.
- Wear loose, light clothing that reflects the sun's rays and allows sweat to evaporate. A hat will add further protection.

Coping with summer heat is just a matter of using common sense.

Used with permission of the National Safety Council, from *Safe Worker*.

Types of Fire Extinguishers

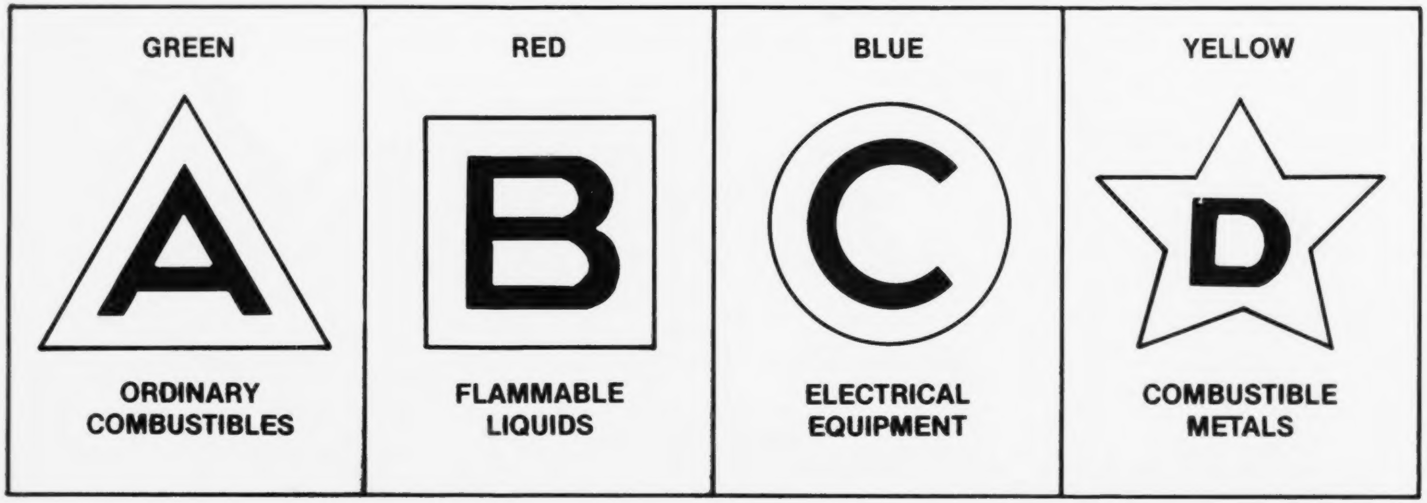
KIND OF FIRE		APPROVED TYPE OF EXTINGUISHER					
		MATCH UP PROPER EXTINGUISHER WITH CLASS OF FIRE SHOWN AT LEFT Important: Using the wrong type extinguisher for the fire may be dangerous					
DECIDE THE CLASS OF FIRE YOU ARE FIGHTING. . .	THEN CHECK THE COLUMNS TO THE RIGHT OF THAT CLASS	**CARBON DIOXIDE** Carbon Dioxide Gas Under Pressure	**PUMP TANK** Plain Water	**MULTI-PURPOSE DRY CHEMICAL**	**ORDINARY DRY CHEMICAL**	**HALON**	**DRY POWDER**
A **CLASS A FIRES** Use These Extinguishers ORDINARY COMBUSTIBLES ●Wood ●Paper ●Cloth, etc.							
B **CLASS B FIRES** Use These Extinguishers FLAMMABLE LIQUIDS, GREASE ●Gasoline ●Paints ●Oils, etc.							
C **CLASS C FIRES** Use These Extinguishers ELECTRICAL EQUIPMENT ●Motors ●Switches, etc.							
D **CLASS D FIRES** Use This Extinguisher COMBUSTIBLE METALS ●Iron ●Magnesium							

Adapted with permission of American Association for Vocational Instructional Materials, Athens, Georgia, from *Developing Shop Safety Skills* by Clinton O. Jacobs and J. Howard Turner, 1981.

TM #1

AHC - 307-B

Standard Letter Symbols for Fire Extinguishers

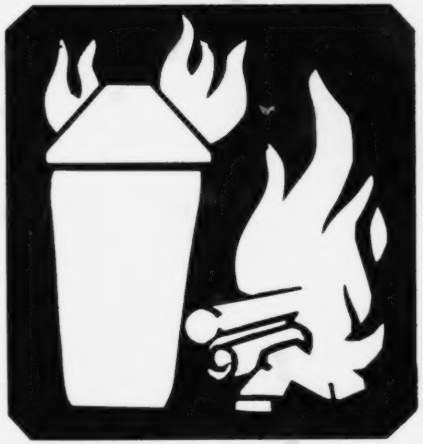


Distinctive letters, shapes, and colors mark extinguishers according to the classes of fires on which they should be used.

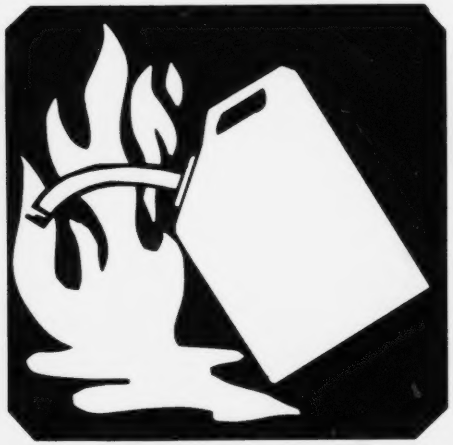
New Pictorial Symbols Used to Label Fire Extinguishers

Symbols with blue backgrounds indicate fire extinguisher can be used for class of fire portrayed.

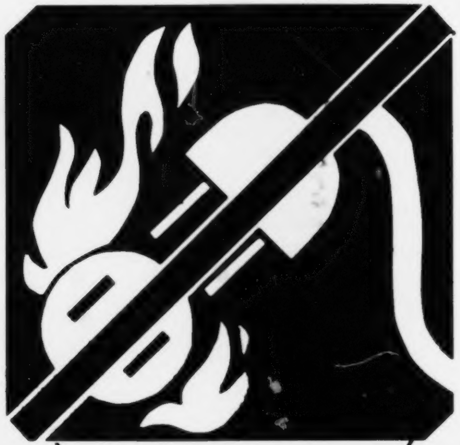
A TRASH•WOOD•PAPER



B LIQUIDS•GREASE



C ELECTRICAL EQUIP

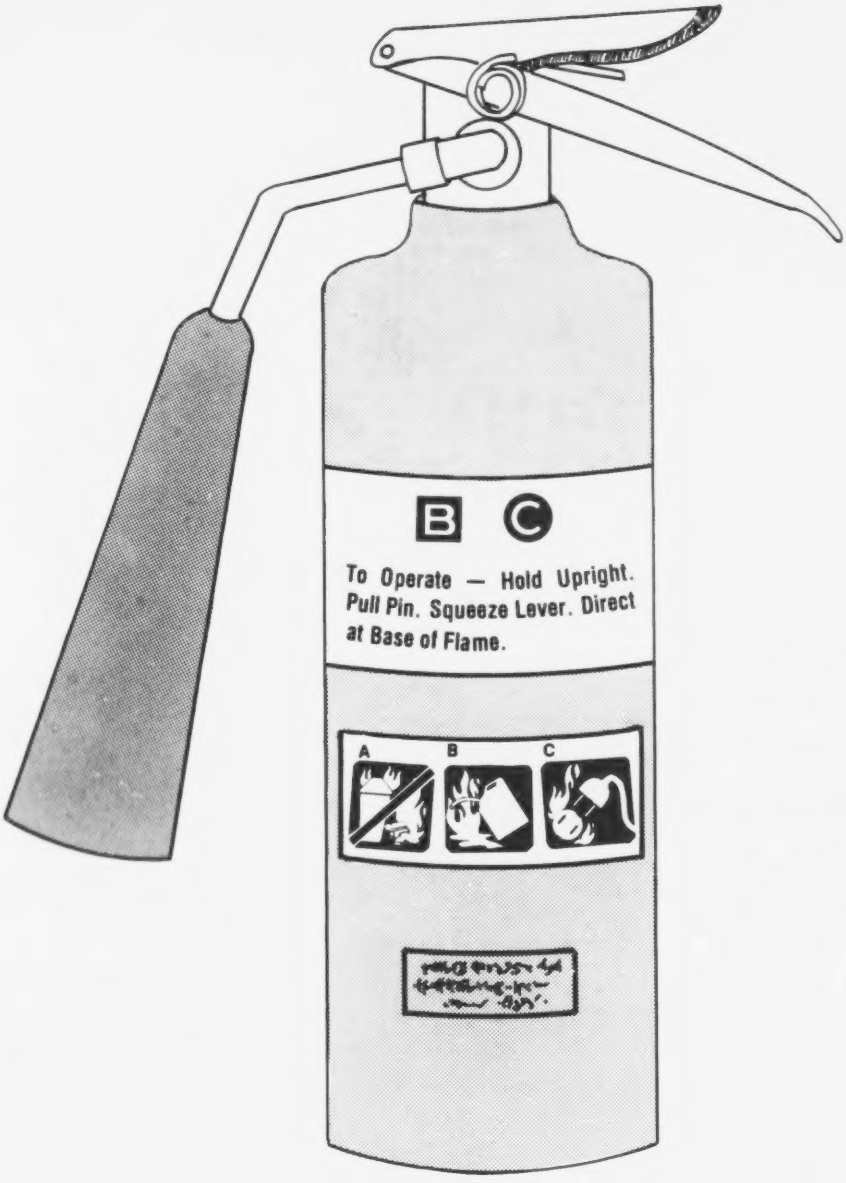


Symbols with red line across a black background indicate fire extinguisher *cannot* be used for class of fire portrayed.

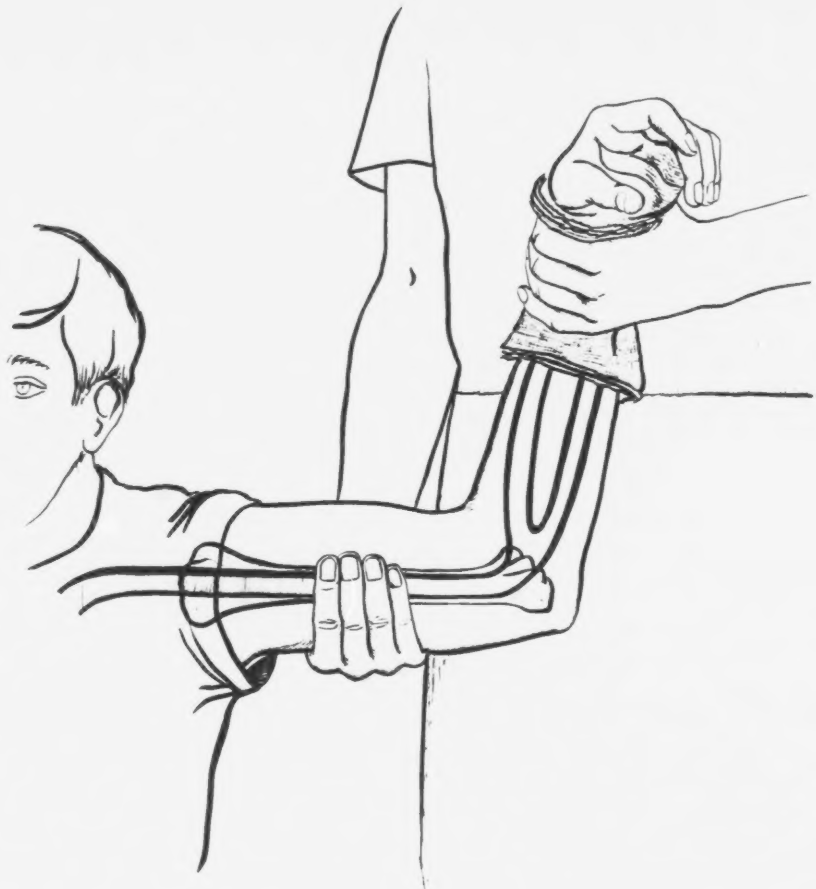
TM #3

AHC - 311-B

Fire Extinguisher Suitable for Class B and Class C Fires

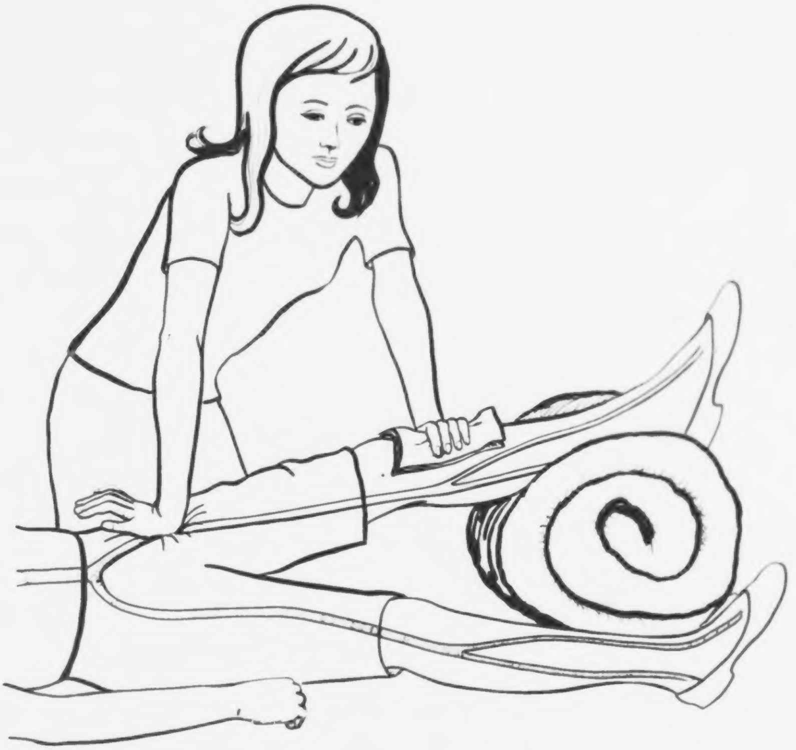

B
C
To Operate — Hold Upright. Pull Pin. Squeeze Lever. Direct at Base of Flame.
A
B
C

Brachial Pressure Point



Courtesy of the American Red Cross.

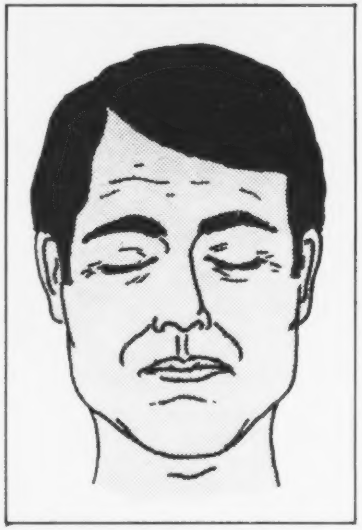
Femoral Pressure Point



Courtesy of the American Red Cross.

Face and Skin Conditions in Heat Stroke and Heat Exhaustion

Heat Stroke

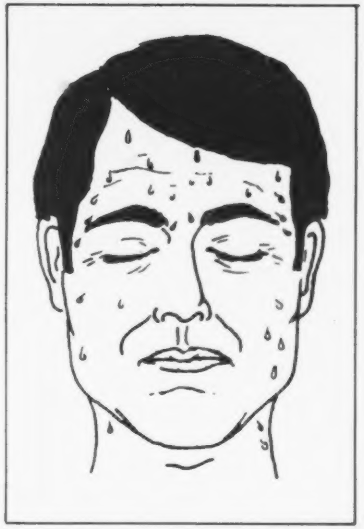


Skin Condition

Hot Red Dry

Cool body quickly.
Get immediate medical help.

Heat Exhaustion



Skin Condition

Clammy Pale Heavy Sweating

Get victim out of sun and heat, elevate feet, cool body, give sips of salt water.

TM #7

AHC - 319-B

SAFETY AND BASIC FIRST AID
UNIT V

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

A. 1. Smoking with oxygen in use
   2. Crutch leaning against bed
   3. Telephone cord on floor, draped across chair
   4. Poor body mechanics: leg on side of bed
   5. Bed too high
   6. Health worker leaning on bedside table, not paying attention to what she is pouring
   7. Glass too close to edge of table

B. 1. Smoking with oxygen in use
   2. Crutch leaning against bed
   3. Telephone cord on floor, draped across chair
   4. Poor body mechanics: leg on side of bed
   5. Bed too high
   6. Glass too close to edge of table
   7. Stethoscope at patient's face

Assignment Sheet #2

Part I

Move victims away from danger of explosion and fire

Man A (4)	Control bleeding if necessary Check and treat for shock
Man B (3)	Check for hemorrhage, apply direct pressure, elevate leg, use pressure point if needed, apply tourniquet if needed Immobilize leg Check and treat for shock
Man C (2)	Maintain airway Splint arm to body, thereby supporting arm and any broken ribs Check and treat for shock
Woman D (1)	Look, listen, and feel for respirations; give artificial respirations if needed Stop bleeding: apply direct pressure, elevate arm, use pressure point if needed, apply tourniquet if needed Check and treat for shock
Woman E (6)	Check for injuries Assess emotional status Check and treat for shock
Woman F (5)	Check right arm for fracture Assess respiratory status Assess diabetic status Support left ankle Check and treat for shock

SAFETY AND BASIC FIRST AID
UNIT V

TEST

NAME ______________________________ SCORE ______________

1. Match terms and definitions associated with safety. Select the correct term for each of the following definitions and then write the correct number in the blank.

_____a. Tending to blow up or burst violently and loudly
   1. Volatile
   2. Explosive
   3. Flammable

_____b. Any sudden, unintentional event that causes injury or property damage
   1. Mishap
   2. Accident
   3. Hazard

_____c. To put out a fire; to cause to cease burning
   1. Extinguish
   2. Control
   3. Eliminate

_____d. Freedom from danger, risk, or injury
   1. Security
   2. Contentment
   3. Safety

_____e. Source of danger
   1. Accident
   2. Hazard
   3. Mishap

_____f. Failure to think before one acts; failure to pay attention
   1. Incompetence
   2. Carelessness
   3. Ignorance

_____g. Capable of burning
   1. Dangerous
   2. Combustible
   3. Explosive

_____h. Capable of being easily ignited; burning with extreme rapidity
   1. Metal
   2. Flammable
   3. Explosive

2. State eight general safety rules.

a. ____

b. ____

c. ____

d. ____

e. ____

f. ____

TEST

g. ______________________________

h. ______________________________

3. Match classes of fires to their correct descriptions. Write the correct numbers in the blanks.

______a. Fires that occur with flammable liquids or gases such as those used in surgery and respiratory therapy

______b. Fires that occur in ordinary combustible materials such as wood, rags, rubber, and plastics

______c. Fires that occur in or near electrical equipment such as electrical wires

______d. Fires that occur with combustible metals

1. Class A
2. Class B
3. Class C
4. Class D

4. Select correct definitions of terms associated with first aid. Write the number of the best definition in each blank.

______a. An *antidote* is

1. An integration of dangerous chemicals
2. A substance that neutralizes poisons
3. An amusing story
4. A fire extinguisher

______b. *Resuscitation* is the

1. Act of reviving a person by giving the person hot, black coffee and forcing him or her to walk
2. Act of reviving a person by applying pressure directly to a wound
3. Act of reviving a person by bringing the person back to full consciousness
4. Act of treating symptoms of shock

______c. *Shock* is a

1. Condition resulting from ineffective circulation of blood and oxygen
2. Condition existing when skin is flushed, hot, and dry, and when body temperature is high
3. Condition existing when skin surface is hard but underlying tissue is soft
4. Condition caused by a decrease in amount of oxygen in the body and an increase in the amount of carbon dioxide; suffocation

TEST

______d. A *hemorrhage* is

1. A mass of dilated veins in swollen tissue situated near the anal sphincter
2. An abnormal internal or external discharge of blood
3. A protrusion of an organ through connective tissue or through a wall of the cavity in which it is normally enclosed
4. A device to immobilize an injured part

______e. *First aid* is the

1. Rhythmic forcing of air into and out of the lungs of a person who has been injured
2. Act of reviving an accident victim by bringing him or her back to full consciousness
3. Suturing of open wounds
4. Immediate, temporary care given to the victim of an accident or sudden illness until the services or a physician can be obtained

______f. A *bandage* is

1. Material used to hold a dressing or splint in place; helps to immobilize, support, and protect an injured body part
2. Any device such as a stick and compress used to control blood flow
3. Any device that will stop bleeding
4. A device to immobilize an injured part when fracture is suspected

______g. A *tourniquet* is

1. Any device, such as a bandage and stick, used to compress a blood vessel to stop bleeding and control blood flow
2. Any clean bandage compressed directly against the wound to control bleeding
3. A triangular bandage made into a sling to hold the affected part until victim can get to hospital
4. A contest between different teams

______h. A *dressing* is

1. Solution to clean infected wounds
2. Protective cover placed over wound
3. Device to immobilize an injured part
4. Material used to hold splint in place

TEST

______i. *Asphyxiation* is

1. A decrease in amount of oxygen and increase in amount of carbon dioxide; suffocation
2. Blue extremities
3. An absence of heartbeat
4. Act of reviving a person by bringing the person back to full consciousness

______j. A *splint* is

1. A protective cover placed over wound
2. A device to immobilize injured part when fracture is suspected
3. A sliver of wood that pierces skin
4. Any device such as a bandage and stick, used to compress a blood vessel to stop bleeding and control blood flow

______k. *Poison* is a substance that

1. Can cause structural damage or functional disturbance
2. Controls bleeding
3. Fights infections
4. Protects wounds

5. Select correct descriptions of types of injuries. Write the number of the best description in each blank.

______a. An *open fracture* is a

1. Simple uncovered fracture
2. Broken bone that must be splinted and put in a sling
3. Broken bone that protrudes through an opening in the skin
4. Broken bone beneath the skin with no open wound

______b. A *strain* is

1. A muscle injury caused by overstretching
2. Trauma to a joint, causing pain and disability
3. Bleeding into a muscle
4. An irregular tear of flesh

TEST

_____c. An *incision* is

1. A cut or wound made by a sharp instrument
2. A bruise
3. Any injury causing a break in the skin or damage to tissues
4. A friction wound

_____d. An *abrasion* is

1. Any injury causing a break in the skin or damage to tissues
2. An irregular tear of the flesh
3. A scraping or rubbing away of a skin surface by friction
4. An injury in which skin is not broken

_____e. A *closed fracture* is a

1. Compound fracture
2. Broken bone that has been immobilized
3. Broken bone that protrudes through an opening in the skin
4. Broken bone beneath the skin with no open wound

_____f. A *laceration* is

1. An injury in which skin is not broken
2. A bruise
3. An irregular tear of flesh
4. A scraping or rubbing away of a skin surface by friction

_____g. A *contusion* is

1. Injury in which skin is not broken
2. Injury in which the skin is broken
3. Cut or wound made by sharp instrument
4. Muscle injury caused by overstretching

TEST

______h. A *sprain* is

1. Muscle injury caused by overstretching
2. Trauma to a joint, causing pain and disability
3. Torn ligaments
4. Injury to the brain, caused by a sharp blow

______i. A *wound* is

1. A scraping or rubbing away of a skin surface by friction
2. A cut made by a sharp instrument
3. Any injury causing a break in the skin or damage to tissues
4. Any injury in which skin is not broken

______j. A *puncture* is

1. Flat tire
2. Irregular tear of flesh
3. Trauma to a joint
4. Wound made by piercing or penetrating with a pointed object or instrument

______k. A *dislocation* is

1. Bone of a joint moved out of its proper place
2. Broken bone
3. Device to immobilize an injured part
4. Muscle injury caused by overstretching

6. Arrange in order first aid actions to follow in an emergency. Write a "1" in the blank before the first step, a "2"in the blank before the second step, and so on.

______a. Control heavy bleeding

______b. Restore or maintain breathing and heartbeat

______c. Rescue victim and yourself from immediate danger

______d. Examine victim carefully to evaluate injury

______e. Treat for poisoning

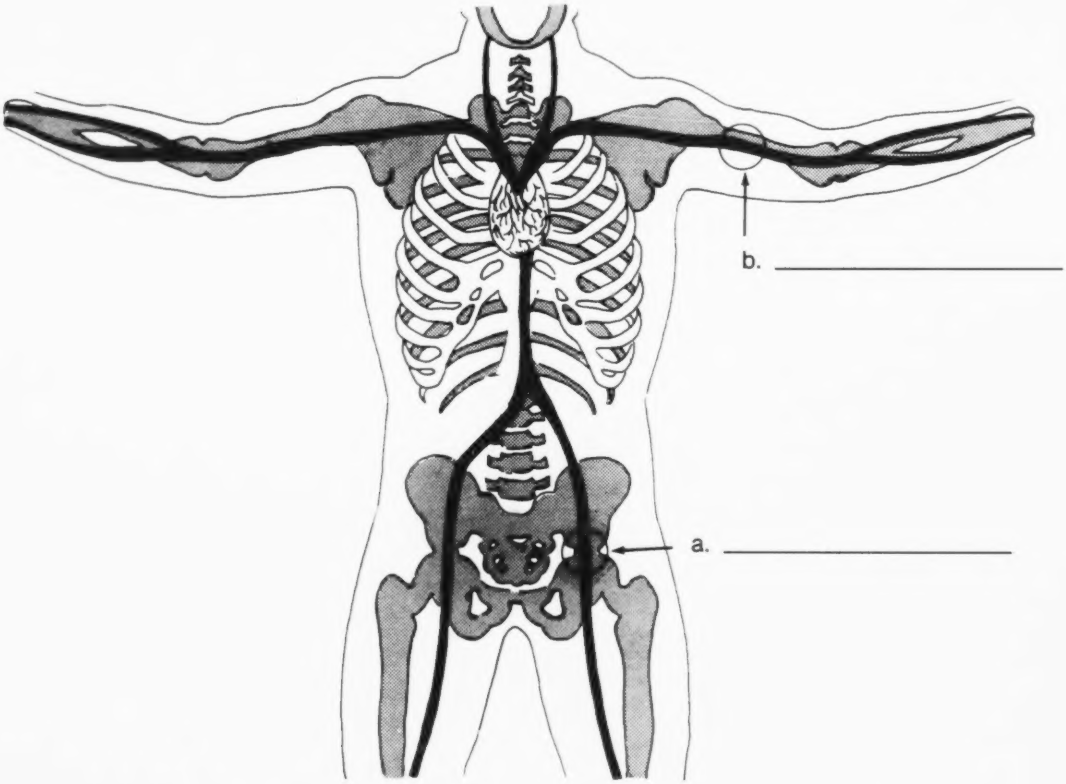
______f. Prevent shock

TEST

______g. Keep checking and assisting victim until medical help is obtained

______h. Seek medical help

7. Label main pressure points to control bleeding. Write the correct names in the blanks.



8. Classify burns by degree according to their symptoms. Write a "1" in the blanks before symptoms of first-degree burns, a "2" before symptoms of second-degree burns, and a "3" in the blanks before symptoms of third-degree burns.

______a. Damage extending into the first layer of tissue

______b. Less pain

______c. Rapid healing

______d. Blistering

______e. Charred or white appearance of burned area

______f. Mild swelling and pain

TEST

______g. Swelling

______h. Pain greater than first-degree

______i. Deep tissue destruction

______j. Wet appearance of burned area due to loss of plasma

______k. Redness or discoloration

______l. Mottled or red areas

9. State guidelines for administering first aid to a victim with an eye injury.

a. ______________________________

____

b. ______________________________

____

c. ______________________________

____

d. ______________________________

____

e. ______________________________

____

10. Name five signs and symptoms of fractures.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

TEST

11. State six guidelines for administering first aid to a victim with a suspected fracture.

a. ______________________________

____

b. ______________________________

____

c. ______________________________

____

d. ______________________________

____

e. ______________________________

____

f. ______________________________

____

12. Name five symptoms of shock.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

e. ______________________________

13. State the guidelines for administering first aid to a victim with shock.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

e. ______________________________

f. ______________________________

TEST

14. State four ways to prevent heat distress.

a. ____________________

b. ____________________

c. ____________________

d. ____________________

15. Distinguish among symptoms of heat stroke, heat exhaustion, and heat cramps. Write "HS" in the blank before heat stroke, "HE" in the blank before heat exhaustion, and "HC" in the blank before heat cramps.

_____a. Muscle pains and spasms caused by loss of salt through perspiration or inadequate intake

_____b. Flushed, hot, dry skin and high body temperature

_____c. Pale, cool, clammy skin and normal body temperature

16. State four ways to prevent frostbite.

a. ____________________

____

b. ____________________

____

c. ____________________

____

d. ____________________

____

17. Describe symptoms of frostbite.

____

____

____

____

____

____

____

____

TEST

(NOTE: Test questions 18 and 19 list assigment sheets, and test question 20 lists the job sheet. They are an important part of this test. If they have not been completed, check with your instructor.)

18. Identify safety violations.

19. Determine priority of care in an emergency situation.

20. Demonstrate the ability to perform first aid treatment for simulated accident victims.

SAFETY AND BASIC FIRST AID
UNIT V

ANSWERS TO TEST

1. a. 2
   b. 2
   c. 1
   d. 3
   e. 2
   f. 2
   g. 2
   h. 2

2. Answer should include any eight of the following

   a. Be familiar with the location of fire-fighting and first aid equipment
   b. Be familiar with institutional policies on disasters
   c. Do not smoke when oxygen is in use
   d. Use proper lifting techniques
   e. Do not use faulty equipment
   f. Wipe up any spills and clean up litter immediately
   g. Move equipment that is left in the improper place
   h. Never use solutions from bottles that are not labeled
   i. Do not perform any procedure on a client unless you have been instructed to do so
   j. Wash your hands frequently
   k. Dry your hands before using electrical equipment
   l. Avoid horseplay and practical jokes

3. a. 2
   b. 1
   c. 3
   d. 4

4. a. 2
   b. 3
   c. 1
   d. 2
   e. 4
   f. 1
   g. 1
   h. 2
   i. 1
   j. 2
   k. 1

5. a. 3
   b. 1
   c. 1
   d. 3
   e. 4
   f. 3
   g. 1
   h. 2
   i. 3
   j. 4
   k. 1

6. a. 3
   b. 2
   c. 1
   d. 6
   e. 4
   f. 5
   g. 8
   h. 7

ANSWERS TO TEST

7. a. Femoral
   b. Brachial

8.

a.	2	e.	3	i.	3
b.	3	f.	1	j.	2
c.	1	g.	2	k.	1
d.	2	h.	2	l.	2

9. a. Do not let the victim rub the eye
   b. Do not attempt to remove a foreign object that is embedded in the eye
   c. Do not attempt to remove any object protruding from the eye
   d. Flood eye with water immediately to remove any chemical substances
   e. Apply a dressing to both eyes if there is a contusion or black eye, internal bleeding, or torn eye tissue

10. Answer should include any five of the following

   a. Victim's account of injury
   b. Deformities
   c. Limited or abnormal movement of a limb
   d. Loss of motion
   e. Pain
   f. Swelling
   g. Discoloration
   h. Bone fragments protruding through the skin
   i. Shortening or lengthening of an extremity
   j. Hemorrhage

11. Answer should include any six of the following

   a. Prevent motion of injured parts and adjacent joints
   b. Do not attempt to move an injured person who obviously requires hospitalization UNLESS there is a life-threatening emergency
   c. Lift and move an unconscious victim as though the injury is to the neck or spine: provide rigid support for victim's back and head
   d. Do not allow victim to move the head (and do not move it yourself) when there is a possible neck or spinal fracture
   e. Give priority to open fractures over closed fractures unless associated injuries dictate otherwise
   f. Never test for fracture by having the victim move the possibly broken part or try to walk on a possibly broken leg
   g. Never attempt to set or reduce a fracture or try to push a protruding bone end back in place
   h. If possible, take time to tie victim's injured leg to uninjured one, or to bind injured arm to chest or side
   i. After providing urgent care, treat victim to prevent shock

ANSWERS TO TEST

12. Answer should include any five of the following

    a. Pale or bluish skin that is cool to the touch
    b. Moist, clammy skin if perspiration has occurred
    c. Rapid, weak pulse
    d. Rapid, shallow, possibly irregular respirations
    e. Low blood pressure
    f. General weakness
    g. Anxiety and restlessness
    h. Excessive thirst
    i. Blurred vision; as shock progresses, the eye may appear sunken
    j. Possibly dilated pupils

13. a. Eliminate cause of shock
    b. Keep victim lying down
    c. Maintain an adequate supply of oxygen
    d. Cover the victim with blankets or clothing to prevent chilling or exposure to cold; place a blanket under the victim if necessary
    e. Avoid giving the victim anything to eat or drink
    f. Obtain medical help as soon as possible

14. Answer should include any four of the following

    a. Drink plenty of fluids
    b. Do not overexert
    c. Wear lightweight clothing that allows sweat to evaporate
    d. Keep head covered and face shaded
    e. Take frequent short work breaks
    f. Rest in the shade or in an air-conditioned room whenever possible

15. a. HC
    b. HS
    c. HE

16. Answer should include any four of the following

    a. Wear protective cold-weather clothing
    b. Wear several layers of light clothing rather than one layer of heavy clothing
    c. Take break periods in a warm place
    d. Drink warm beverages
    e. Try to keep from sweating
    f. Do not get clothes wet

ANSWERS TO TEST

17. Answer should include the following
    a. Pale, grayish, glossy skin
    b. Skin cold to touch, numbness, and sometimes pain that gradually subsides
    c. In extreme cases confusion, lethargy, shock, followed by unconsciousness and death

18. Evaluated to the satisfaction of the instructor

19. Evaluated to the satisfaction of the instructor

20. Performance skills evaluated to the satisfaction of the instructor

BASIC MATHEMATICS
UNIT I

SUGGESTED ACTIVITIES

I. Unit contents

   A. Objective sheet

   B. Suggested activities

   C. Supplements

      1. Supplement #1 — Crossword Puzzle of Math Terms

      2. Supplement #2 — Subtraction Squares

      3. Supplement #3 — Division Rap

      4. Supplement #4 — Crossnumber Puzzle of Math Problems

   D. Transparency masters

      1. TM #1 — Ratio and Proportion

      2. TM #2 — Graduations on a Rule

      3. TM #3 — Graduations on a Rule (Continued)

      4. TM #4 — Reading Fourths on a Rule

      5. TM #5 — Reading Eighths on a Rule

      6. TM #6 — Reading Sixteenths on a Rule

      7. TM #7 — Roman Math Class

      8. TM #8 — Roman Math Class (Continued)

   E. Information sheet

   F. Assignment sheets

      1. Assignment Sheet #1 — Add Whole Numbers

      2. Assignment Sheet #2 — Subtract Whole Numbers

      3. Assignment Sheet #3 — Multiply Whole Numbers

      4. Assignment Sheet #4 — Divide Whole Numbers

SUGGESTED ACTIVITIES

5. Assignment Sheet #5 — Work with Fractions
6. Assignment Sheet #6 — Reduce Fractions to Lowest Terms
7. Assignment Sheet #7 — Convert Unlike Fractions to Like Fractions
8. Assignment Sheet #8 — Convert Fractions and Mixed Numbers
9. Assignment Sheet #9 — Add Fractions
10. Assignment Sheet #10 — Subtract Fractions
11. Assignment Sheet #11 — Multiply Fractions
12. Assignment Sheet #12 — Divide Fractions
13. Assignment Sheet #13 — Add Decimal Numbers
14. Assignment Sheet #14 — Subtract Decimal Numbers
15. Assignment Sheet #15 — Multiply Decimal Numbers
16. Assignment Sheet #16 — Divide Decimal Numbers
17. Assignment Sheet #17 — Convert Fractions and Percentages
18. Assignment Sheet #18 — Solve Percentage Problems
19. Assignment Sheet #19 — Solve Basic Ratio and Proportion Problems
20. Assignment Sheet #20 — Read Measurements on a Rule
21. Assignment Sheet #21 — Convert Roman and Arabic Numerals

G. Answers to assignment sheets

H. Test

I. Answers to test

II. Instructor's guide

A. Review unit and plan presentation.

(NOTE: If necessary, contact your resource center specialist or one of the other teachers to help teach this unit.)

B. Obtain materials to supplement unit.

SUGGESTED ACTIVITIES

1. Film — *Metric System*. 13 minutes, 1970. Available from Films Inc, 733 Green Bay Road, Wilmette, IL 60091. This fun, animated film points out the foibles of the imperial system and introduces the reasons why 80 percent of the world already uses the advantageous metric system for weight, linear, and liquid measures.

   (NOTE: This film is available on a free-loan basis to Oklahoma Instructors. Oklahoma teachers may order from the State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, Film Library, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364. Out-of-state teachers must order from the address listed with the film.)

2. Books

   a. *Speaking of Numbers*. This self-instructional workbook/textbook series is intended for use with two groups of students: 1) beginning English-as-a-Second-Language students who are concurrently studying English and basic mathematic skills; and 2) native speakers of English who require remediation and reinforcement in numbers and arithmetic operations.

      (NOTE: *Speaking of Numbers* is available from the Institute of Modern Languages, 2622 Pittman Drive, Silver Spring, Maryland 20910.)

   b. *Math*. This book is part of a series of manuals developed specifically for special needs programs for disadvantaged and handicapped students. Seven areas of instruction have assignment sheets specifically designed to acquaint students with basic and practical mathematical problems and terms directly related to vocational skill trades. The guide contains instruction in measurement, whole numbers, fractions, decimals, percentages, consumer education, and geometry.

      (NOTE: *Math* is available from the Oklahoma State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

3. Computer software

   (NOTE: These programs can be ordered from Teachware, P.O. Box 94365, Oklahoma City, OK 73143. Telephone [405] 794-3748 or [405] 799-8156.)

   a. *Success With Math*. Available from CBS software for the Apple, IBM, and Commodore. This series of self-paced tutorials can be used for remedial teaching. Easy-to-use software corrects errors as they occur with an explanation. The series contains addition and subtraction, multiplication and division, fractions, decimals, linear equations, and quadratic equations.

SUGGESTED ACTIVITIES

b. *Math Blaster*. Available from Davidson & Associates, Inc., 6069 Groveoak Place, #12, Rancho Palos Verdes, California 90274, for the Apple, Commodore, IBM, and Macintosh. Math Blaster has four visually appealing learning activities for multiplication, division, subtraction, addition, percentages, fractions, and decimals. A fast-action arcade-type game reinforces the learning process. Software contains 600 math problems at five levels of difficulty.

4. Transparencies and competency profiles

(NOTE: Transparencies and competency profiles for this book are available from the Oklahoma State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

C. Make additional transparencies and additional copies of assignment sheets and supplements if needed.

D. Use the assignment sheets (or parts of them) to pretest students in each math concept. Those students who demonstrate proficiency and an understanding of the concept may use the assignment sheets as a review or may be paired with those students who need help in mastering the concepts.

(NOTE: It is suggested that this unit be taught as an outside assignment for those students who did not successfully complete the pretest.)

E. Provide students with unit.

F. Discuss unit and specific objectives.

G. Introduce unit by stressing the importance of mathematics in the allied health careers, and the applications of math in daily living.

- Discuss the applications of basic math in any of the allied health careers. Come up with an application in each of the careers your students have shown interest in.
- Stress the importance of accuracy in mathematic calculations.
- Point out the need for math as a life survival skill, i.e., home budget preparation, calculation of interest, balancing a check book, working out take-home pay, income tax preparation, computer skills.
- Discuss that in today's world of calculators, there will still be times when a person will need to do some calculations.
- Discuss the technological explosion presently underway in the world and its effects on our lives. Emphasize the increased demand for technical skills.

SUGGESTED ACTIVITIES

- Point out that an understanding of mathematical concepts, a grasp of analytical logic, accuracy in computational skills, and the ability to apply these skills to a wide variety of situations are essential to getting and keeping a job.

H. Discuss information and assignment sheets.

1. Use Information Sheet, Section I, to discuss terms associated with math and measuring.
    - Relate terms to health usage.
    - Point out the importance of defining terms for common understanding.
    - Have students complete Supplement #1 as a review of terms.
2. Use Information Sheet, Section II, to discuss symbols used in math problems.
    - Prepare examples of problems using the symbols.
    - Have students discuss where they have seen the math symbols used.
3. Use Information Sheet, Sections III and IV, and Assignment Sheet #1 to discuss addition.
    - Play "You Inherit" with the students to help them learn place values. Ask students to tell you the least amount they inherit when you give them the amount in numbers of digits.

      EXAMPLE: Q. You have just inherited a six-digit sum. What is the least amount you inherit?
      A. One hundred thousand dollars

    - Prepare groups of objects such as bottle caps, books, tacks, nails, boards, and crayons to be added at different tables. Have students stop at each table and perform the addition as directed. Provide each student with a work sheet on which the equation and answer could be written.

      (NOTE: Similar situations could be set up for subtraction.)

    - Have students play dominoes. Score ends in multiples of five and play to 250, or score ends at end of each turn and play to 1,000 points.

SUGGESTED ACTIVITIES

4. Use Information Sheet, Section V, and Assignment Sheet #2 to discuss subtraction.

   - Develop a set of flash cards containing various subtraction problems. Show students each card and have them give you the correct answer, either orally or written on a sheet of paper.

   - Use spinner and game boards. Each student spins twice, writes down each number, subtracts the difference and moves the marker the appropriate number of jumps.

   - Have students practice subtraction by completing Supplement #2.

     (NOTE: You may want to prepare similar squares for addition, multiplication, and division with whole numbers, fractions, or decimals.)

5. Use Information Sheet, Section VI, and Assignment Sheet #3 to discuss multiplication.

   - Obtain or make multiplication table to 12. Have students learn the table.

   - Play "Rhythm" to practice the multiplication table. Have students sit in a circle. Have all students clap hands twice on legs, then clap hands together twice, then snap fingers twice to establish a rhythm that is to continue unbroken throughout the game. The caller gives a multiplication (or other operation) problem such as 8 × 6 while snapping fingers, and at the next finger snapping says the name of someone to answer the problem. The responder gives answer at next finger snapping without breaking the clap/snap rhythm. If the responder maintains the rhythm and gives the correct answer, then he or she becomes the next caller. If the responder breaks the rhythm or gives an incorrect answer, then he or she is out of the game. The last person left is the winner.

6. Use Information Sheet, Section VII, and Assignment Sheet #4 to discuss division.

   - Do the Division Rap in Supplement #3. Make a transparency or handouts of the general section, which is the section that the students learn. Recite the general section, and then write the division problem on the chalkboard. Work the problem as you describe the steps in the specific section of the rap. Encourage students to chime in on each repeat of "Divide, Multiply, Subtract, and Bring Down."

SUGGESTED ACTIVITIES

- For students who consistently cannot make the appropriate decisions to solve long-division exercises, try the following "decision-free," step-by-step procedure.

a. Copy the problem.

b. Draw a vertical line to the right of the problem.

c. Make a guess and write that down to the right of the vertical line.

d. Multiply the guess by the divisor and subtract from the original number.

e. Repeat the process until subtracting produces a number smaller than divisor.

52)86310	
52000	1000
34310	
20800	400
13510	
10400	200
3110	
2600	50
510	
416	8
94	
52	1
42	1659

f. The answer is the sum of the guesses.

g. Check by multiplying the answer times the divisor and adding the remainder. If the problem has been solved correctly, the resulting sum should equal the original number inside the division frame.

EXAMPLE:		
	1659	Answer
	× 52	Divisor
	3318	
	8295	
	86268	
	+ 42	Remainder
	86310	Sum Equal to Original Number

- Play "Wastebasketball" to practice adding, subtracting, multiplying, and dividing. Equipment includes a wastebasket in each corner of the room and four balls of paper or four sponges or four chalkboard erasers. Divide the class into four teams. Standing 10 feet from the basket, each team member get nine shots: three set shots, three hook shots, and three behind-the-back shots. When all teams have taken their shots, the teams post the results on the chalkboard. The winning team is the one whose team members can all correctly add the total shots taken and made for each team, subtract the shots made from those taken, multiply the number made by the number taken, and divide the number taken by the number made.

Source: "Mathletics: Adding Activity to Arithmetic," by Richard W. Mack, *Arithmetic Teacher*, XXXIII (April, 1986), pp. 39-40.

SUGGESTED ACTIVITIES

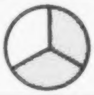
7. Use Information Sheet, Section VIII, and Assignment Sheet #5 to discuss types of fractions.

    - Write a proper fraction, such as 3/8, on the chalkboard. Label the fraction's nominator and denominator. Explain that the denominator of this (or any) fraction represents the way the unit has been split. Illustrate this point by drawing on the chalkboard a circle split into eight parts. Now explain that the numerator of this (or any) fraction represents the number of parts involved in the calculation. Therefore the fraction 3/8 indicates three parts of something that has been divided into eight parts. Shade in three of the eight parts of the circle to illustrate this point.

    - Make two decks of cards. Show fractions on one deck and the corresponding pictures on the other deck.

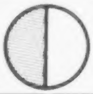
      EXAMPLE:

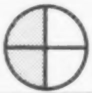
      2/3

      Cards can also be made to show equivalent fractions, using pictures and fractions.

      EXAMPLE:

      
      1/2

      
      2/4

      Students may play a game of matching or rummy by making pairs that match.

8. Use Information Sheet, Section IX, and Assignment Sheets #6 and #7 to discuss reducing fractions to the lowest terms and converting unlike fractions to like fractions.

    - Prepare twenty-four tagboard flash cards. On each card, write two or three unlike fractions.

      EXAMPLES:

      1/2 3/8 3/4

      3/5 2/3 1/6

SUGGESTED ACTIVITIES

Laminate the cards. Have students number their papers from 1 to 24; then give them fifteen seconds to write the least common denominator for the fractions on each flash card shown. To increase the difficulty, shorten the time-span for calculating each lowest common denominator.

- Use these flash cards later with Sections XII-XIV to practice addition, subtraction, and multiplication of fractions.

9. Use Information Sheet, Sections X and XI, and Assignment Sheet #8 to discuss converting mixed numbers to improper fractions and converting improper fractions to mixed numbers.

10. Use Information Sheet, Section XII, and Assignment Sheet #9 to discuss adding fractions.

11. Use Information Sheet, Section XIII, and Assignment Sheet #10 to discuss subtracting fractions.

12. Use Information Sheet, Section XIV, and Assignment Sheet #11 to discuss multiplying fractions.

13. Use Information Sheet, Section XV, and Assignment Sheet #12 to discuss dividing fractions.

14. Use Information Sheet, Section XVI, to discuss the place values of decimals.

    - Have students write down several decimal numbers. Have students write out the decimal number by place values, i.e., tenths, hundredths, thousandths, ten thousandths, millionths.

15. Use Information Sheet, Section XVII, and Assignment Sheet #13 to discuss adding decimal numbers.

    - Assign a monetary value to each letter of the alphabet: A=$0.50, B=$1.00, C=$1.50. . . Z=$13.00. Then have students calculate such problems as who has the most valuable name in the class, in their family. What chapter title in the curriculum has the most value? What level of Maslow's hierarchy of needs has the most value? Which one of the student's cars has the most valuable name? Survey the student's occupational choices and have them calculate the one with the most name value.

      (NOTE: This activity can be adapted and used to practice multiplication of whole numbers, or for practice with fractions.)

SUGGESTED ACTIVITIES

16. Use Information Sheet, Section XVIII, and Assignment Sheet #14 to discuss subtracting decimal numbers. Emphasize the importance of checking answers.

17. Use Information Sheet, Section XIX, and Assignment Sheet #15 to discuss multiplying decimal numbers.

    - Increase student speed in certain multiplication problems by giving timed tests in which the student must use the following shortcuts.

      To multiply by

      5, 50, 500 etc., just multiply by 10, 100, 1000, etc., and divide by 2;

      25, 250, 2500, etc., just multiply by 100, 1000, etc., and divide by 4;

      $33^1/_3$, $16^2/_3$, $12^1/_2$, $8^1/_3$, $6^1/_4$ multiply by 100 and divide by 3, 6, 8, 12, 16, respectively.

18. Use Information Sheet, Section XX and Assignment Sheet #16 to discuss dividing decimal numbers.

    - Increase student speed in certain division problems by giving timed tests in which students use the following shortcuts.

      To divide by

      $3^1/_3$, multiply by 3 and divide by 10;

      $33^1/_3$, multiply by 3 and divide by 100;

      $16^2/_3$, multiply by 6 and divide by 100;

      25, multiply by 4 and divide by 100;

      50, multiply by 2 and divide by 100.

      (NOTE: You and your students may know of other shortcuts to add to this list and to the list of multiplication shortcuts.)

19. Use Information Sheet, Sections XXI through XXIII, and Assignment Sheets #17 and #18 to discuss fractional equivalents, the conversion of fractions and decimals, and percentage problems.

    - Before presenting rules for converting fractions to decimals, have students solve problems by converting the decimals to fractions. The answer from the computation with the equivalent fractions must then be converted back to a decimal form. A half-dozen exercises like this for each decimal rule may help students appreciate the benefits of learning the rules and why the decimal rules work.

SUGGESTED ACTIVITIES

$$\text{EXAMPLE:}\quad 5.67 + 3.2 + 4.104 = 5\frac{670}{1000} + 3\frac{200}{1000} + 4\frac{104}{1000}$$

$$= 12\frac{974}{1000}$$

$$= 12.974$$

- Invite a local dentist to demonstrate instruments with different diameters. Have the students note the decimal and fractional differences of the instrument sizes.
- Invite a surgical nurse from a hospital that does orthopedic surgery to show the students a set of twist drills used in bone surgery. Have the students note the decimal and fractional differences and drill sizes.
- Illustrate percentages by providing students with graph or grid paper. Have students outline at least eight 10-by-10-block squares. Since each block contains 100 units or small squares, students can shade in enough units to illustrate 25 percent, $33\frac{1}{3}$ percent, 50 percent, 96 percent, and so on.
- Play "Free-Throw Fractions" to practice using fractions and computing percentages. Divide your class into as many teams as you have wastebaskets. Give each team a ball of paper, a sponge, or a chalkboard eraser. While each team member shoots ten free throws into the wastebasket, the other team members chart the number of shots taken and the number of shots made. When all team members have had an opportunity to shoot, team members must compute the fraction or percentage of the shots that were made for the entire team. The winning team is the one whose team members can all correctly compute the fraction or percentage of team shots.

Source: "Mathletics: Adding Activity to Arithmetic," by Richard W. Mack, *Arithmetic Teacher*, XXXIII (April, 1986), pp. 39-40.

- Have students complete Supplement #4, Crossnumber Puzzle of Math Problems, to practice addition, subtraction, multiplication, division, multiplying fractions, and computing percentages.

20. Use Information Sheet, Section XXIV, and Assignment Sheet #19 to discuss ratio and proportion.

    - Use Transparency #1 to illustrate ratio and proportion.

21. Use Information Sheet, Section XXV, to discuss the graduations on a rule.

    - Illustrate your discussion with Transparency #2.

22. Use Information Sheet, Section XXVI, to discuss reading a rule.

    - Use Transparencies #3 through #6 to help explain the relationships among the different graduations on a rule.

SUGGESTED ACTIVITIES

- Have students practice measuring with rules by measuring various items in the classroom: length of books, length and width of desk or table, height of chairs, length of pencil, and so on. Have students record their measurements on a sheet of paper, and then have them convert their measurements into improper fractions. After they have the improper fractions, have them give their lists to other students who then convert the improper fractions to mixed numbers.
- Have pairs of students measure each other's head circumference, wrist circumference, and arm length to practice reading a tape measure.
- Have students complete Assignment Sheet #20 so that they may practice reading a rule and measuring objects.

23. Use Information Sheet, Section XXVII, to discuss Roman and Arabic numerals.

    - Explain possible applications for Roman numerals in various health professions.
    - Do random sample problems on the board to explain the step-by-step procedures for converting Roman numerals to Arabic numerals and vice versa.
    - Show Transparencies #7 and #8.
    - Have students complete Assignment Sheet #21 for practice converting Roman and Arabic numerals.

I. Give test.

(NOTE: You may choose to divide this test into parts, such as the math processes, fractions, and decimals. Give each part at a separate time.)

J. Critique test and discuss in class.

K. Reteach and retest if necessary.

L. Complete appropriate section of students' competency profiles.

III. Unit reference

Litton, Bill and James Sharpton. *Introduction to Auto Body*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1985.

BASIC MATHEMATICS
UNIT I

SUPPLEMENT #1 — CROSSWORD PUZZLE OF MATH TERMS

NAME ______________________________ SCORE ______________

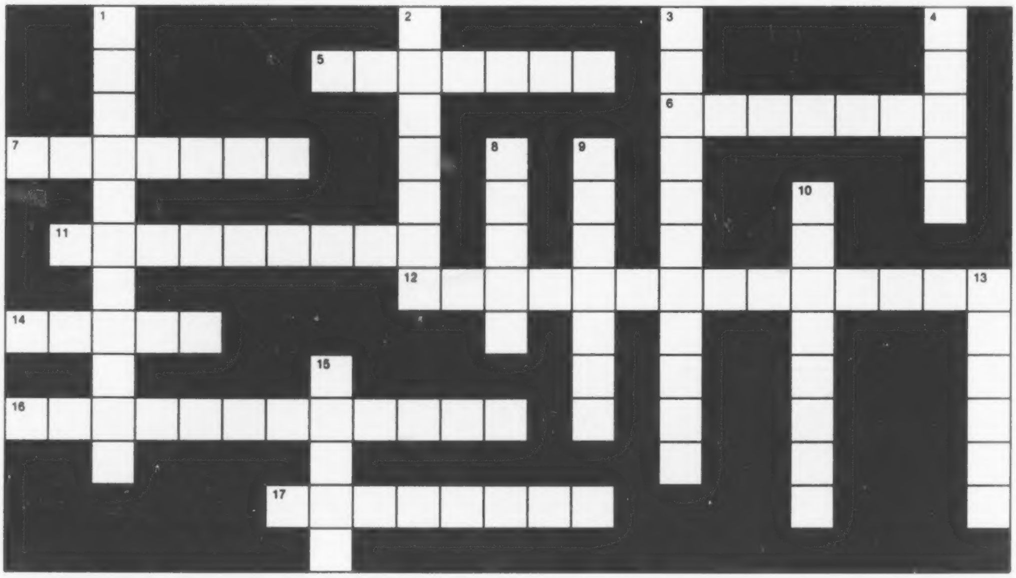
To help you review the terms used in this unit, use the clues below to complete the following crossword puzzle.

ACROSS

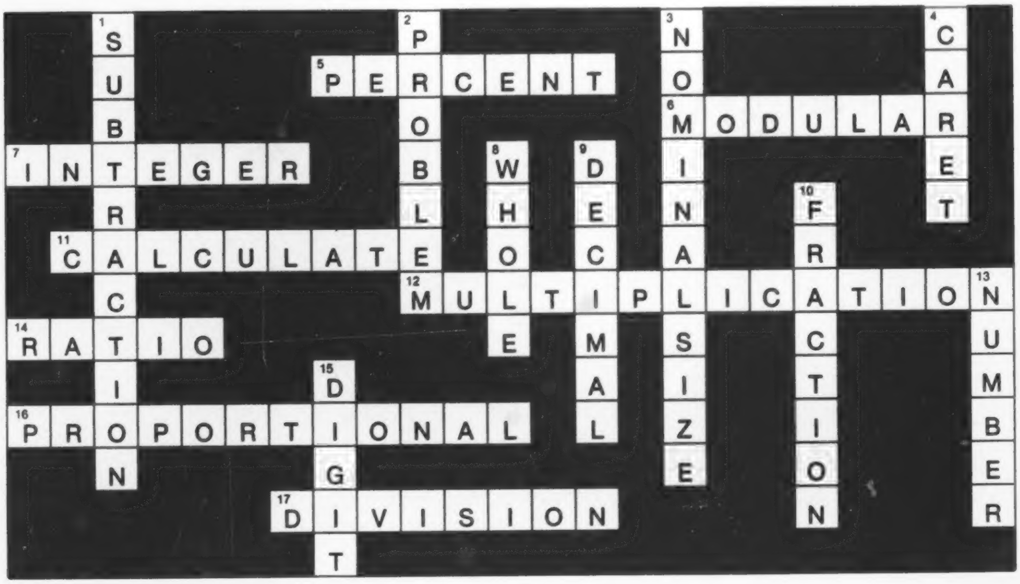
5. One part in a hundred; reckoned on the basis of a whole divided into one hundred parts
6. Pertaining to nominal units based on a 4-inch module
7. Any of the natural numbers; the whole numbers, positive and negative
11. To solve by mathematical process
12. Abbreviated process of adding an integer to itself a specified number of times
14. Relationship in quantity, amount, or size between two or more things; expressed with ratio symbol
16. Being relatively equal in size or quantity
17. Opposite (inverse) operation of multiplication

DOWN

1. Opposite (inverse) operation of addition
2. Mathematical proposition
3. Theoretical size that may vary from the actual (2 wds.)
4. Inverted "V" symbol used to indicate where something is to be inserted
8. With 13 Down, any of the integers that represents a complete item
9. Fraction with an unwritten denominator of 10 or some power of 10, indicated with a point before the numerator
10. Part of a whole; represents one or more equal parts of a unit
13. See 8 Down
15. Any one of the ten symbols, 0 to 9, by which all numbers can be expressed



SUPPLEMENT #1



BASIC MATHEMATICS
UNIT I

SUPPLEMENT #2 — SUBTRACTION SQUARES

Cut out the sixteen squares shown below and then fit them together so that the edges that touch form a problem and its correct solution. For better durability, glue the sheet to heavy poster board before cutting out squares.

10−5 6 9−1 8−1	8 10−7 15−5 12−2	9−4 5	11−2 2
6 6−2 12−6 10−2	7 10 6−4 9−6	4−0 7	0 12−3
7−4 2 4	3 10−6 9−2	10 8−3 4	4 3 5
9 8 3	1 8−8 5	9 7−6 9−3	8−6 4 7−3

SUPPLEMENT #2

11-2 2	9 7-6 9-3	1 8-8 5	0 12-3
8-6 4 7-3	6 6-2 12-6 10-2	10-5 6 9-1 8-1	9 8 3
4 3 5	8 10-7 15-5 12-2	7 10 6-4 9-6	7-4 2 4
9-4 5	10 8-3 4	3 10-6 9-2	4-0 7

BASIC MATHEMATICS
UNIT I

SUPPLEMENT #3 — DIVISION RAP

DIVISION RAP

General Section:

I'm Dr. P. and I'm on the scene,
With my division rap and it's truly mean.
It goes "Divide, Multiply, Subtract, and Bring Down,"
I said, "Divide, Multiply, Subtract, and Bring Down."

Now we can do it wrong, or we can do it right,
But if we do it wrong, we'll be here all night
So let's Divide, Multiply, Subtract, and Bring Down.
Again, Divide, Multiply, Subtract, and Bring Down.

First, we Divide, and then like 1-2-3,
Step 2 is Multiply—sometimes that socks it to me.
Step 3 is Subtract, and it's a natural fact
That you Bring Down the next digit, and then go right back.

To Divide, Multiply, Subtract, and Bring Down.
That's Divide, Multiply, Subtract, and Bring Down.

Specific Section:

When rapping on a problem, you can really get your kicks.
So when 192 is divided by 6,
We'll rap about division to find the right solution
That's quick and clean without arithmetic pollution.

$$6\overline{)192}$$

We start with Divide. How many 6s are in 1?
Of course, there are none so that's easily done
So we try 19, divided by 6 is 3—so sweet.
We write it down and just keep rappin' to the beat.

$$\begin{array}{r} 3 \\ 6\overline{)192} \end{array}$$

Next we Multiply 6 × 3; that's 18.
And we write it down below the 19.
When we Subtract, the difference is 1.
And when we Bring Down the 2, we're almost done.

$$\begin{array}{r} 3 \\ 6\overline{)192} \\ -18 \\ \hline 12 \end{array}$$

We Divide, Multiply, Subtract, Bring Down.
Divide, Multiply, Subtract, Bring Down

So back to Divide the 12 by 6. That's 2.
Write it, Multiply it by 6 (we're nearly through).
Subtract 12 from 12 and write the zero difference down,
And there's nothing left for us to Bring Down.

$$\begin{array}{r} 32 \\ 6\overline{)192} \\ -18 \\ \hline 12 \\ -12 \\ \hline 0 \end{array}$$

So read the answer that's written on the top
Say "32," and then we can stop.
We've solved this little division algorithm
With some basic facts and the soulful rhythm.

Of Divide, Multiply, Subtract, Bring Down.
Divide, Multiply, Subtract, Bring Down

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BASIC MATHEMATICS
UNIT I

SUPPLEMENT #4 — CROSSNUMBER PUZZLE OF MATH PROBLEMS

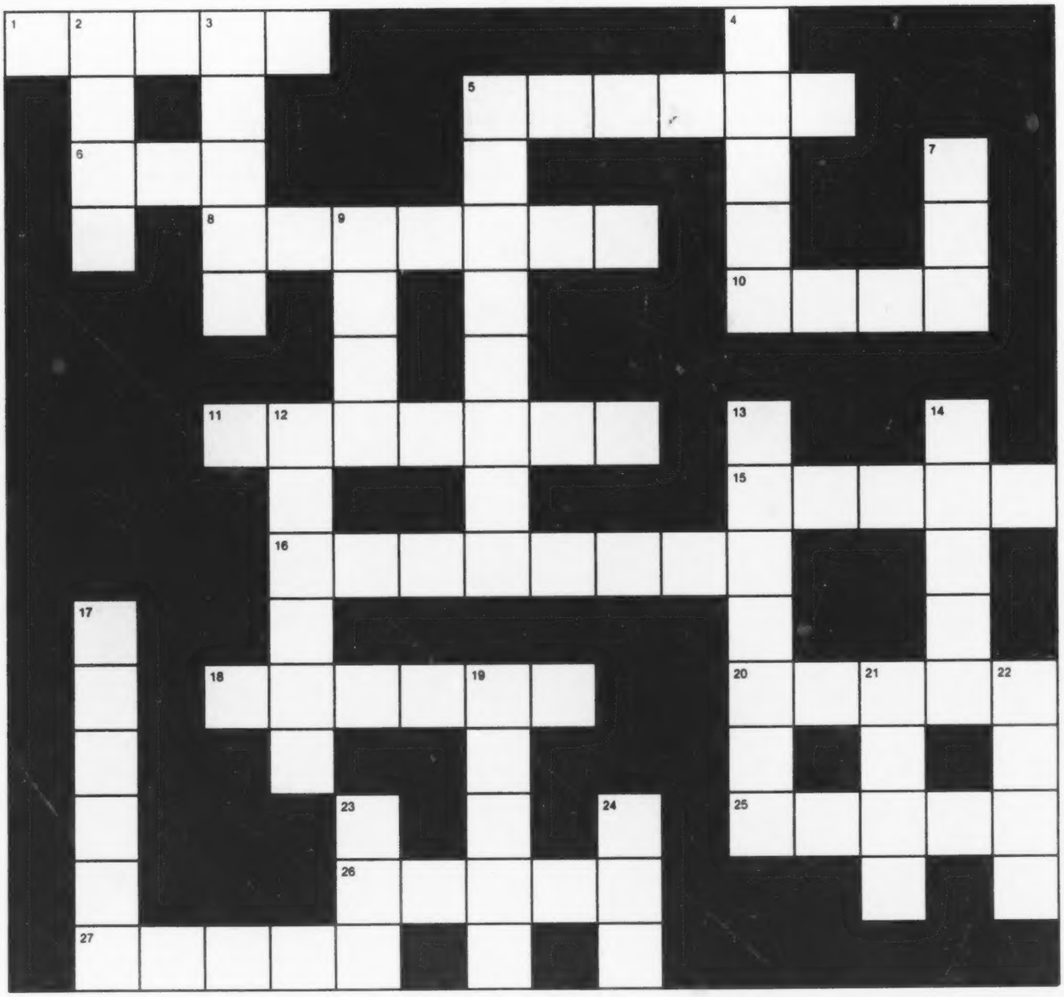
ACROSS CLUES

1. Subtract 12345 from 66666
5. Add 40% of 9835 to 174598
6. 15% of 2500
8. Add 3737373 to 6251014
10. Subtract 3819 from 9183, add 2557
11. Add 373737 to 2408946
15. Multiply 1993 by 45
16. Add 62429422 to 22455422
18. Multiply 849 by 578
20. Add 13492 to 15432
25. Multiply 287 by 225
26. Triple 29843
27. 25% of 100000

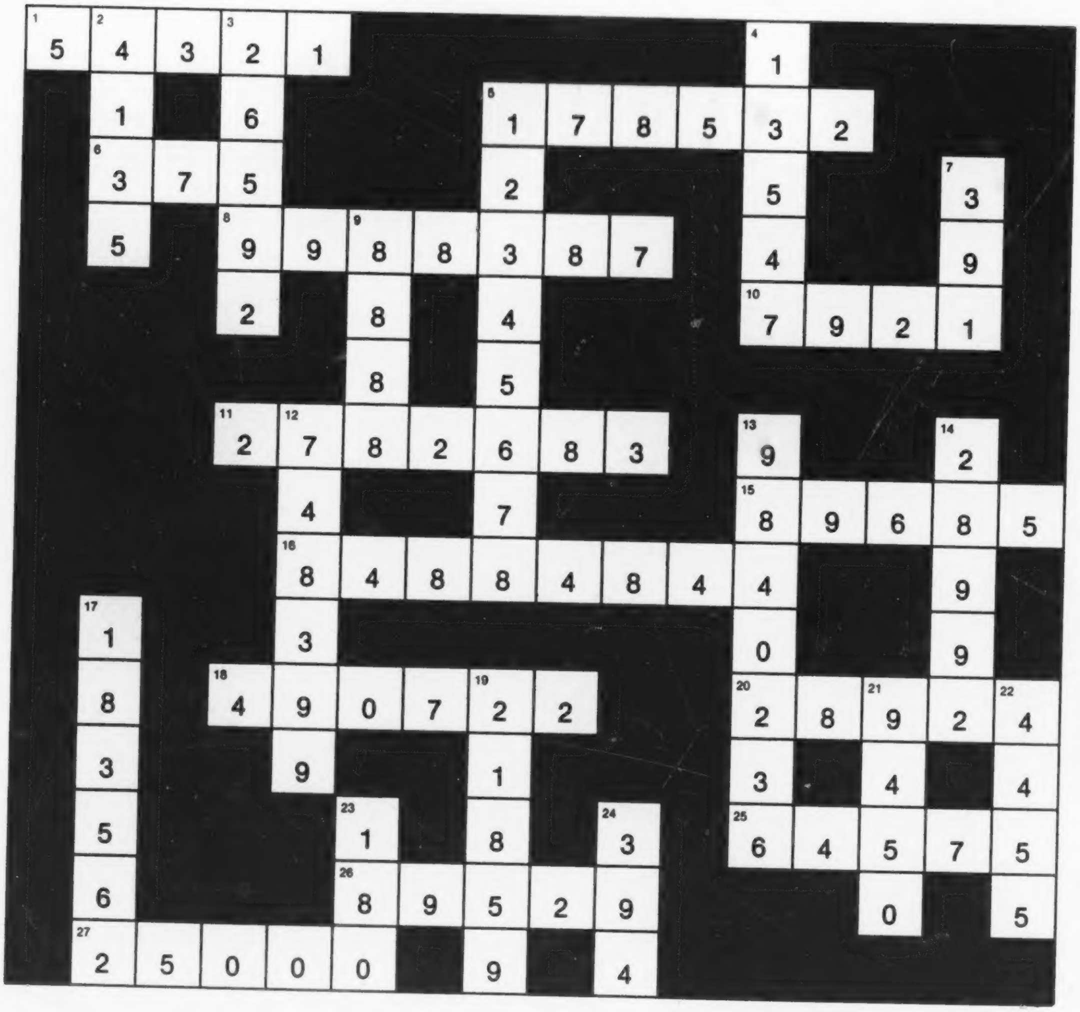
DOWN CLUES

2. Multiply 827 by 5
3. Multiply 277 by 96
4. Multiply 437 by 31
5. Add 4691357 to 7654321
7. 17/20 of 460
9. Multiply 808 by 11
12. Subtract 225987 from 974386
13. Add 5678990 to 4161246
14. 15% of 193280
17. Add 180000 to 3562
19. Divide 590193 by 27
21. Multiply 378 by 25
22. Multiply 297 by 15
23. Multiply 18 by 10
24. Multiply 28 by 17, subtract 82

SUPPLEMENT #4



SUPPLEMENT #4



5	4	3	2	1							1				
	1		6				1	7	8	5	3	2			
	3	7	5				2				5			3	
	5		9	9	8	8	3	8	7		4			9	
			2		8		4				7	9	2	1	
					8		5								
			2	7	8	2	6	8	3		9			2	
				4			7				8	9	6	8	5
				8	4	8	8	4	8	4	4			9	
	1			3							0			9	
	8		4	9	0	7	2	2			2	8	9	2	4
	3			9			1				3		4		4
	5				1		8		3		6	4	5	7	5
	6				8	9	5	2	9				0		5
	2	5	0	0	0		9		4						

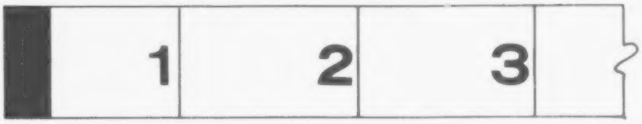
Ratio and Proportion

1 : 1 : 18 = Ratio of Dextrose, Alcohol and Sodium Chloride in an IV Solution

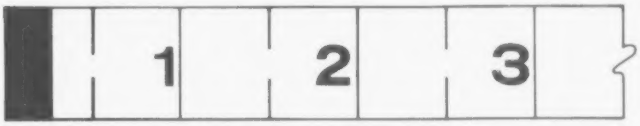
0.5 : 0.5 : 9 = Proportion of Ratio 1 : 1 : 18 Cut in Half

Graduations on a Rule

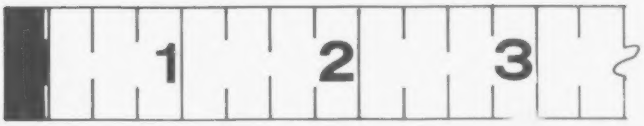
Inches



Halves



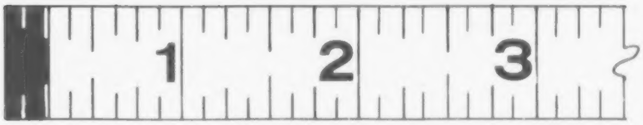
Quarters or Fourths



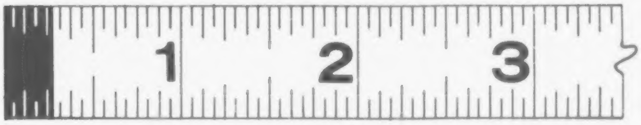
Graduations on a Rule

(Continued)

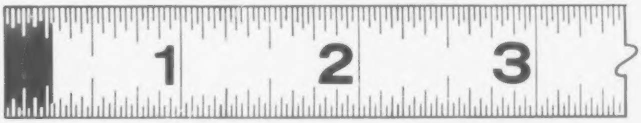
Eighths



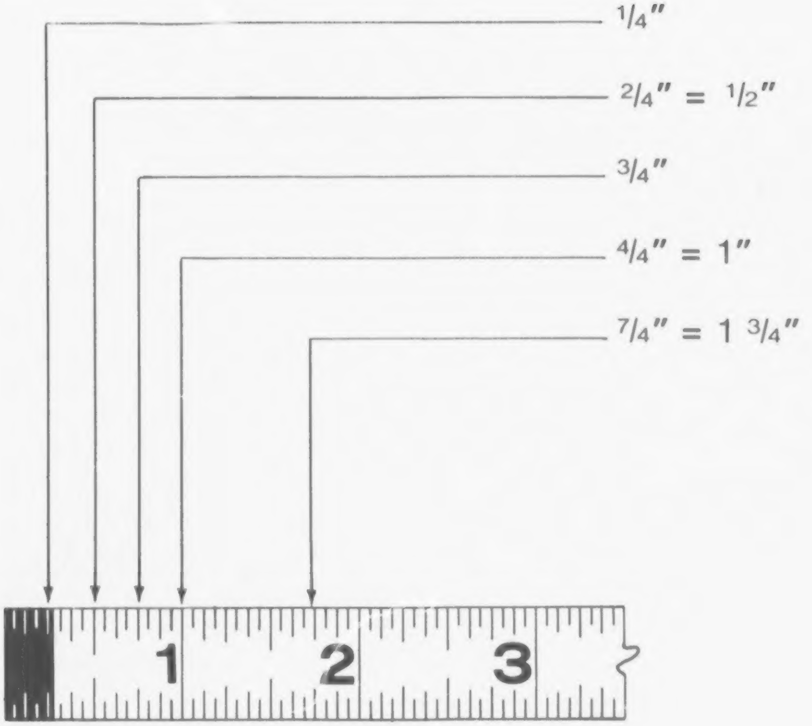
Sixteenths



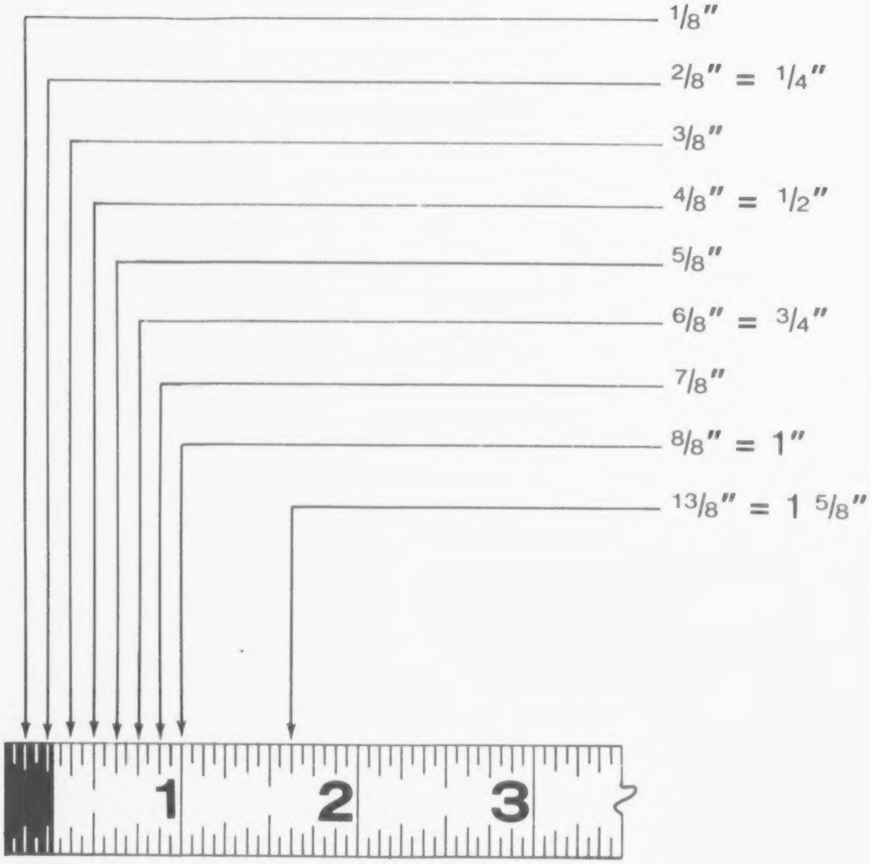
Thirty-Seconds



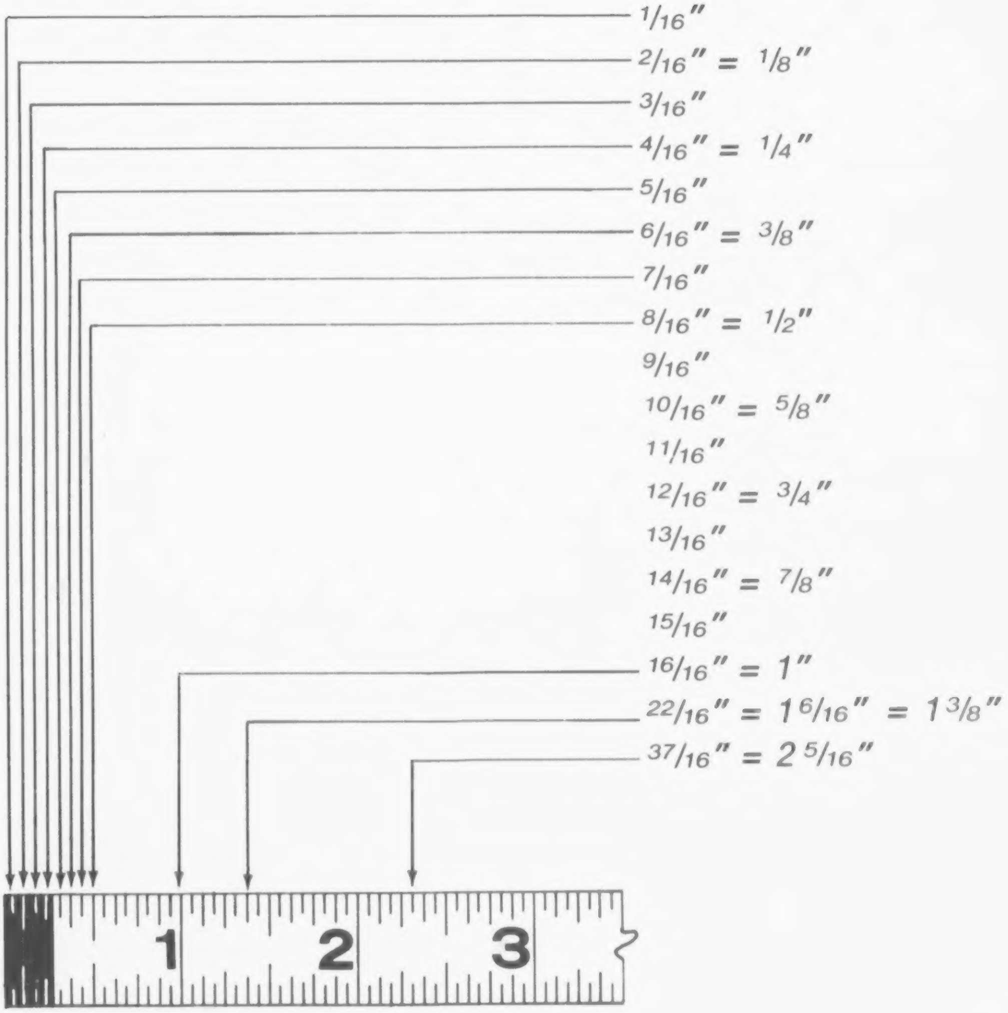
Reading Fourths on a Rule



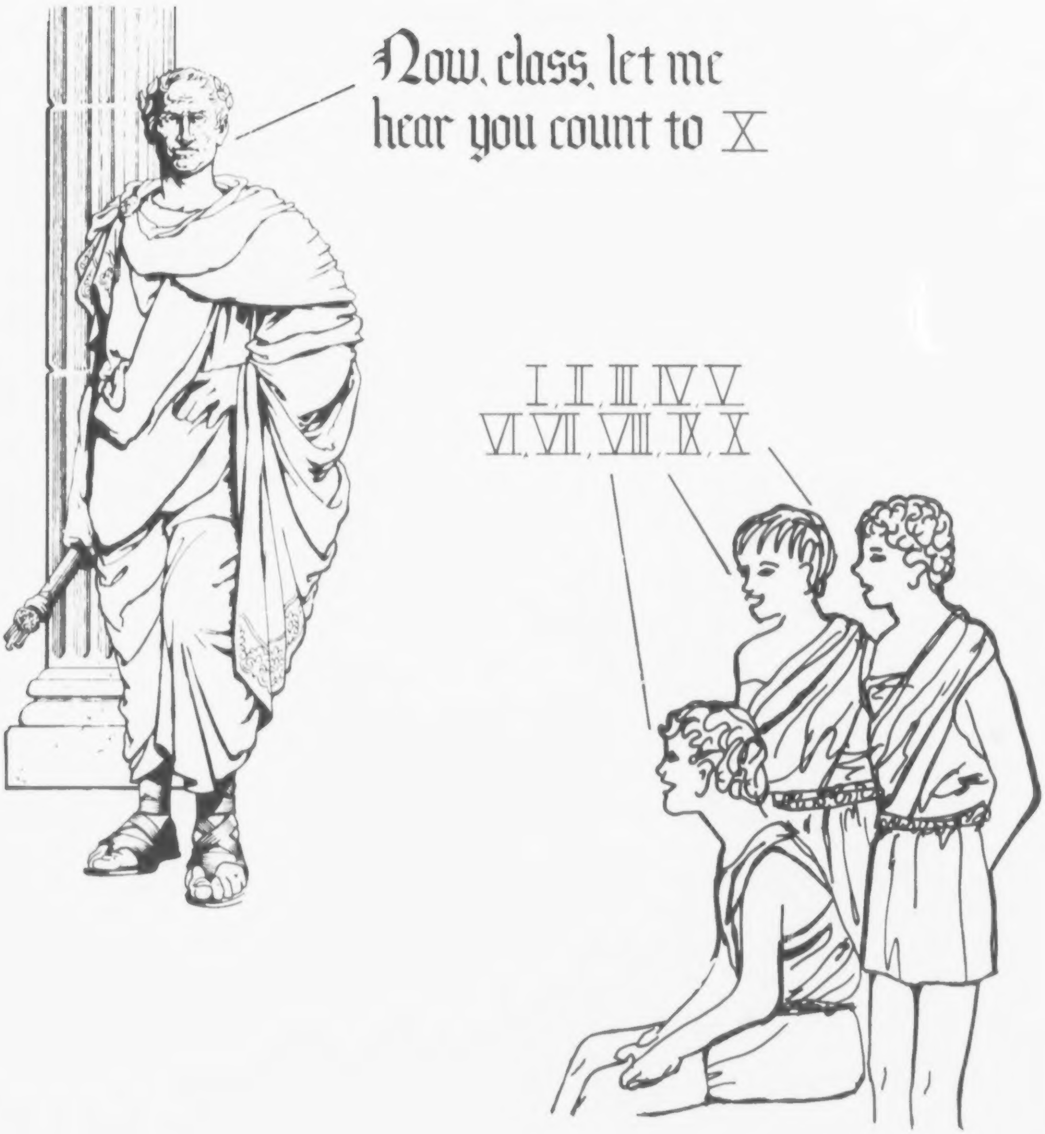
Reading Eighths on a Rule



Reading Sixteenths on a Rule

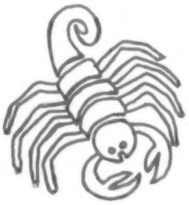


Roman Math Class


Now, class, let me hear you count to X
I, II, III, IV, V
VI, VII, VIII, IX, X

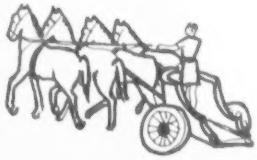
Roman Math Class

(Continued)



Q. How many legs does the scorpion have ?

A. VIII



Q. How many horses are pulling the chariot?

A. IV

BASIC MATHEMATICS
UNIT I

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

Part I

A. 11
B. 16
C. 13
D. 23
E. 108
F. 88
G. 242
H. 1538
I. 1917
J. 16,430

Part II

A. 1175 tablets
B. 1135 copies
C. $609
D. 12,130 square feet

Assignment Sheet #2

Part I

A. 4
B. 7
C. 53
D. 406
E. 424
F. 283
G. 1175
H. 1810
I. 51,450
J. 89,722

Part II

A. 126 towels
B. 1160 beds
C. 948 surgeries
D. $134

Assignment Sheet #3

Part I

A. 42
B. 72
C. 324
D. 2884
E. 8410
F. 2028
G. 21,291
H. 165,478
I. 503,605
J. 5,458,852

Part II

A. 450 yards
B. 8160 codes
C. 2850 clients
D. 1440 hours

Assignment Sheet #4

Part I

A. 4
B. 8
C. 91
D. 312
E. 3
F. 3
G. 62, R 4
H. 2, R 97
I. 1, R 365
J. 3, R 634

Part II

A. 28 treatments per week
B. 14 cattle
C. 97 feet
D. 4 fans

Assignment Sheet #5

Part I

A. 1. 5,8
  2. numerator, denominator
  3. 1,4

B. 1. $^{10}/_{16}$
  2. $^{16}/_{32}$

C. 1. 1
  2. 8
  3. $^{1}/_{8}$

ANSWERS TO ASSIGNMENT SHEETS

Part II

A. 1. n
2. d
3. f
4. k
5. a
6. j
7. i
8. l
9. b
10. g
11. m
12. c
13. h
14. o
15. e

B. Evaluated to the satisfaction of the instructor

Assignment Sheet #6

A. $^{1}/_{2}$
B. $^{1}/_{2}$
C. 1
D. $^{1}/_{4}$
E. $^{1}/_{4}$
F. $^{3}/_{8}$
G. $^{1}/_{2}$
H. $^{1}/_{2}$
I. $^{3}/_{4}$
J. $^{1}/_{2}$

Assignment Sheet #7

Part I

A. 4
B. 8
C. 3
D. 5
E. 3
F. 20
G. 18
H. 9
I. 6
J. 28
K. 3
L. 7

Part II

A. $^{6}/_{16}$ and $^{8}/_{16}$
B. $^{96}/_{128}$ and $^{36}/_{128}$
C. $^{8}/_{128}$ and $^{80}/_{128}$
D. $^{16}/_{32}$ and $^{14}/_{32}$
E. $^{1536}/_{2048}$ and $^{1152}/_{2048}$ and $^{448}/_{2048}$

Part III

A. $^{6}/_{20}$ and $^{5}/_{20}$
B. $^{32}/_{48}$ and $^{9}/_{48}$
C. $^{24}/_{32}$ and $^{9}/_{32}$
D. $^{8}/_{16}$ and $^{7}/_{16}$
E. $^{30}/_{40}$ and $^{25}/_{40}$ and $^{28}/_{40}$

Assignment Sheet #8

Part I

A. 1. P
2. M
3. I
4. M
5. P
6. I
7. I
8. M
9. I
10. M
11. M
12. I
13. I
14. P
15. M

B. Evaluated to the satisfaction of the instructor

C. Evaluated to the satisfaction of the instructor

Part II

A. 1. $^{13}/_{4}$
2. $^{9}/_{2}$
3. $^{31}/_{4}$
4. $^{17}/_{2}$
5. $^{49}/_{8}$
6. $^{11}/_{2}$
7. $^{17}/_{4}$
8. $^{17}/_{2}$
9. $^{37}/_{4}$
10. $^{33}/_{2}$

B. 1. $1^{3}/_{4}$
2. $4^{1}/_{2}$
3. $1^{1}/_{2}$
4. $1^{7}/_{8}$
5. $1^{3}/_{16}$
6. $1^{3}/_{8}$
7. $2^{11}/_{32}$
8. $2^{1}/_{2}$
9. $3^{3}/_{4}$
10. $2^{1}/_{16}$

Assignment Sheet #9

A. $^{1}/_{2}$
B. 1
C. $^{23}/_{32}$
D. $1^{3}/_{16}$
E. $^{29}/_{32}$
F. $1^{3}/_{16}$
G. $1^{5}/_{16}$
H. $1^{25}/_{32}$
I. $^{5}/_{8}$ gallon
J. $1^{3}/_{32}$ inches

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #10

A. $^{9}/_{16}$
B. $^{5}/_{8}$
C. $^{3}/_{16}$
D. $^{5}/_{32}$
E. $^{3}/_{4}$
F. $^{9}/_{16}$
G. $^{1}/_{16}$
H. $^{3}/_{8}$
I. $^{17}/_{32}$
J. $^{1}/_{2}$
K. $^{1}/_{2}$ inch
L. $^{3}/_{32}$ inch
M. $^{1}/_{8}$ inch
N. $23^{7}/_{64}$ inches
O. $^{3}/_{4}$ inch

Assignment Sheet #11

A. $^{3}/_{8}$
B. $3^{3}/_{8}$
C. $^{7}/_{12}$
D. $^{1}/_{24}$
E. $^{15}/_{128}$
F. $3^{1}/_{4}$
G. $1^{1}/_{2}$
H. $16^{27}/_{32}$
I. $^{1}/_{4}$ gallon
J. 74 gauze pads
K. $4^{1}/_{3}$ gallons
L. $^{7}/_{8}$ inch

Assignment Sheet #12

A. $1^{1}/_{2}$
B. $1^{1}/_{2}$
C. $1^{5}/_{16}$
D. $14^{2}/_{3}$
E. $1^{1}/_{5}$
F. $2^{1}/_{2}$
G. $2^{1}/_{4}$
H. 40
I. $8^{1}/_{12}$ feet
J. $1^{15}/_{16}$ gallons
K. $5^{1}/_{4}$ days
L. $8^{83}/_{132}$ EKGs

Assignment Sheet #13

A. 0.189
B. 1.072
C. $9.22
D. 0.0102
E. $71.01
F. $131.32
G. 287.706
H. 0.4000
I. 6.455
J. 30024.88
K. 56.000
L. 0.87139
M. $164.80
N. 27.9 hours
O. $122.71
P. 1366.6 miles

Assignment Sheet #14

A. 351.98
B. 547.144
C. 141.013
D. 508.16
E. $749.25
F. $4.15
G. 670.4
H. 4107.34
I. $2.47
J. $197.45
K. 603.7 miles
L. $1781.04
M. $177.43
N. 1516.5 square feet

Assignment Sheet #15

A. 8.184
B. 39.6
C. 1.1475
D. 297.5
E. 100.32
F. 6.4584
G. 0.4565
H. 25.38
I. 0.00069
J. 22.6352
K. $337.45
L. $6,187.50
M. $132.62
N. 2079.375 grams

Assignment Sheet #16

A. 9
B. 12.4
C. 33
D. 153
E. 1.5
F. 284
G. 0.8
H. 0.5
I. 300
J. 0.4
K. 2500
L. 1200
M. 12,000
N. 170
O. 14,000
P. $8.64
Q. 30.3 hours
R. 32 clients
S. $21.60
T. 0.75 hour

Assignment Sheet #17

Part I

A.
1. 0.125
2. 0.25
3. 0.5
4. 0.75
5. 0.625
6. 0.0625
7. 0.09375
8. 0.875
9. 0.5625
10. 0.9375

ANSWERS TO ASSIGNMENT SHEETS

B.
1. 25%
2. 50%
3. 70%
4. 75%
5. 100%
6. 10%
7. 87.5%
8. 50%
9. 33.3%
10. 62.5%

Part II

A.
1. g
2. j
3. d
4. a
5. i
6. b
7. c
8. f
9. h
10. e

B.
1. 63.9
2. 5.93
3. 5.093
4. 5.0093
5. 3.825
6. 38.95
7. 38.095
8. 42.3
9. 402.3
10. 897.00097

Part III

A.
1. $\frac{1}{2}$
2. $\frac{1}{4}$
3. $\frac{1}{3}$
4. $\frac{9}{25}$
5. $\frac{7}{25}$
6. $\frac{1}{7}$
7. $\frac{21}{100}$
8. $\frac{3}{4}$
9. $\frac{2}{3}$
10. $\frac{7}{10}$

B.
1. 0.47
2. 0.15
3. 0.333
4. 0.62
5. 0.75
6. 0.03
7. 0.168
8. 0.09
9. 0.10
10. 0.50

Assignment Sheet #18

Part I

A. All work is completed
B. 14%
C. 86, 86%
D. 25%, 5%
E. 94%
F. 6, 6%
G. 89%
H. 94%
I. $24.00
J. $57,282
K. 5%
L. 38%
M. 25%
N. 60%
O. 7%

Part II

A. 2.16
B. 0.9
C. 32
D. 50
E. 43.18
F. 17.6
G. 1.03
H. 57
I. 16.4
J. 11.41

Part III

A. 12
B. 1
C. $14.40
D. 600

Assignment Sheet #19

A. 1:1:4
B. 0.5:1:6
C. 3:3:9
D. 6:6:36
E. 2 units of dextrose
2 units of alcohol
36 units of sodium chloride

Assignment Sheet #20

Part I

A.
1. $\frac{1}{4}''$
2. $\frac{1}{2}''$
3. $1\frac{1}{4}''$
4. $1\frac{3}{4}''$
5. $1\frac{1}{4}''$
6. $2\frac{1}{2}''$
7. $1\frac{1}{4}''$
8. $2\frac{1}{2}''$
9. $1\frac{1}{2}''$
10. $4''$

B.
1. $\frac{3}{8}''$
2. $\frac{1}{4}''$
3. $1\frac{1}{8}''$
4. $\frac{3}{4}''$
5. $1\frac{1}{2}''$
6. $2\frac{3}{4}''$
7. $\frac{1}{2}''$
8. $2''$
9. $3\frac{7}{8}''$
10. $2\frac{3}{8}''$

C.
1. $\frac{15}{16}''$
2. $\frac{1}{2}''$
3. $1\frac{13}{16}''$
4. $\frac{3}{4}''$
5. $1\frac{11}{16}''$
6. $3\frac{5}{16}''$
7. $1\frac{1}{2}''$
8. $2\frac{5}{8}''$
9. $4\frac{1}{4}''$
10. $1\frac{5}{8}''$

ANSWERS TO ASSIGNMENT SHEETS

D. 1. $\frac{25}{32}$"
2. $1\frac{5}{32}$"
3. $\frac{3}{8}$"
4. $1\frac{27}{32}$"
5. $1\frac{9}{16}$"
6. $1\frac{1}{2}$"
7. $1\frac{3}{16}$"
8. $2\frac{13}{16}$"
9. $4\frac{9}{32}$"
10. $1\frac{15}{16}$"

Part II

A. 1. $4\frac{5}{16}$ inches
2. $2\frac{13}{16}$ inches

B. 1. 2 inches
2. 2 inches

C. 1. $2\frac{8}{16}$ inches = $2\frac{1}{2}$ inches
2. $1\frac{10}{16}$ inches = $1\frac{5}{8}$ inches

D. Evaluated to the satisfaction of the instructor

Assignment Sheet #21

Part I

A. 4
B. 26
C. 94
D. 5
E. 29
F. 119
G. 6
H. 34
I. 9
J. 49
K. 8
L. 14
M. 80
N. 24
O. 51

Part II

A. LI
B. VIII
C. CXII
D. XVII
E. II
F. XLVI
G. LXXXV
H. CXXIII
I. CLX
J. XXXIV
K. XIX
L. LXXIII
M. V
N. XXI
O. C

BASIC MATHEMATICS
UNIT I

TEST

NAME ____ SCORE ________________

1. Match to their correct definitions terms associated with basic math. Write the correct numbers in the blanks.

______a. Process of totaling two or more numbers to find another number called a sum

______b. Fraction with an unwritten denominator of 10 or some power of 10; indicated with a point before the numerator

______c. Top number of a fraction; indicates how many parts of the denominator are taken

______d. Opposite (inverse) operation of multiplication

______e. Part of a whole; represents one or more equal parts of a unit

______f. Any natural number, either positive or negative, that represents a complete item

______g. Abbreviated process of adding a number to itself a specified number of times

______h. One part in a hundred; reckoned on the basis of a whole divided into one hundred parts

______i. Being relatively equal in size or quantity; having the same ratio

______j. Relationship in quantity, amount, or size between two or more things; proportion

______k. Opposite (inverse) operation of addition

______l. Any one of the ten symbols, 0 to 9, by which all numbers can be expressed; numeral

______m. Bottom number of a fraction; indicates how many equal parts a unit contains; denotes *division*

1. Digit
2. Multiplication
3. Subtraction
4. Whole number (integer)
5. Addition
6. Fraction
7. Ratio
8. Proportional
9. Division
10. Decimal
11. Percent
12. Numerator
13. Denominator

TEST

2. Match to their correct names symbols used in math problems. Write the correct numbers in the blanks.

_____a. Plus sign (addition)
_____b. Division sign
_____c. Equal sign
_____d. Division frame
_____e. Ratio symbol
_____f. Minus sign (subtraction)
_____g. Percent symbol
_____h. Times sign (multiplication)
_____i. Decimal point

1. =
2. ×
3. −
4. ÷
5. +
6. .
7. ⟌
8. %
9. :

3. Label the place values in the whole number below. Write the correct names in the blanks beside the letters.

8, 1 4 2, 5 9 7

a. ____

b. ____

c. ____

d. ____

e. ____

f. ____

g. ____

TEST

4. Add whole numbers to solve the following problems. Show your work.

a. $\begin{array}{r} 2 \\ +\ 9 \\ \hline \end{array}$ b. $\begin{array}{r} 5 \\ 7 \\ +\ 8 \\ \hline \end{array}$ c. $\begin{array}{r} 12 \\ 17 \\ +\ 99 \\ \hline \end{array}$ d. $\begin{array}{r} 142 \\ 759 \\ +\ 896 \\ \hline \end{array}$ e. $\begin{array}{r} 2345 \\ 9764 \\ +\ 8976 \\ \hline \end{array}$

5. Subtract whole numbers to solve the following problems. Check your answers and show your work.

a. $\begin{array}{r} 9 \\ -\ 7 \\ \hline \end{array}$ b. $\begin{array}{r} 35 \\ -\ \ 9 \\ \hline \end{array}$ c. $\begin{array}{r} 481 \\ -\ \ 79 \\ \hline \end{array}$ d. $\begin{array}{r} 684 \\ -\ 342 \\ \hline \end{array}$ e. $\begin{array}{r} 9867 \\ -\ 8748 \\ \hline \end{array}$

6. Multiply whole numbers to solve the following problems. Show your work.

a. $\begin{array}{r} 7 \\ \times\ 5 \\ \hline \end{array}$ b. $\begin{array}{r} 68 \\ \times\ \ 9 \\ \hline \end{array}$ c. $\begin{array}{r} 735 \\ \times\ \ 68 \\ \hline \end{array}$ d. $\begin{array}{r} 649 \\ \times\ 537 \\ \hline \end{array}$ e. $\begin{array}{r} 8673 \\ \times\ \ 642 \\ \hline \end{array}$

7. Divide whole numbers to solve the following problems. Show your work.

a. $4\overline{)48}$ b. $16\overline{)64}$ c. $38\overline{)608}$

TEST

d. $421\overline{)842}$ e. $317\overline{)4569}$ f. $530\overline{)80960}$

8. Distinguish among types of fractions. Write a "P" in the blanks before proper fractions, an "I" before improper fractions, and an "M" in the blanks before mixed numbers.

_____a. $^{1}/_{2}$

_____b. $8^{3}/_{4}$

_____c. $^{8}/_{8}$

_____d. $15^{3}/_{8}$

_____e. $5^{3}/_{16}$

_____f. $^{10}/_{32}$

_____g. $^{2}/_{8}$

_____h. $6^{1}/_{2}$

_____i. $^{1}/_{4}$

_____j. $^{99}/_{1}$

9. Reduce the following fractions to lowest terms. Write your answers in the blanks.

__________a. $^{4}/_{8}$

__________b. $^{8}/_{16}$

__________c. $^{7}/_{16}$

__________d. $^{8}/_{32}$

__________e. $^{12}/_{32}$

__________f. $^{4}/_{16}$

__________g. $^{2}/_{16}$

__________h. $^{8}/_{64}$

__________i. $^{12}/_{16}$

__________j. $^{31}/_{32}$

10. Convert the following mixed numbers to improper fractions. Reduce to lowest terms if possible. Write your answers in the blanks.

__________a. $3\frac{1}{2}$

__________b. $4\frac{2}{4}$

__________c. $3\frac{6}{8}$

__________d. $12\frac{4}{8}$

__________e. $13\frac{13}{32}$

TEST

11. Convert the following improper fractions to mixed numbers. Reduce answers to lowest terms. Write your answers in the blanks.

__________ a. $\frac{47}{8}$

__________ b. $\frac{21}{9}$

__________ c. $\frac{108}{23}$

__________ d. $\frac{54}{5}$

__________ e. $\frac{112}{7}$

12. Add fractions to solve the following problems. Convert to mixed numbers if necessary, and reduce to lowest terms. Write your answers in the blanks.

__________ a. $\frac{1}{8} + \frac{5}{8}$

__________ b. $\frac{1}{16} + \frac{15}{16}$

__________ c. $\frac{2}{4} + \frac{3}{4}$

__________ d. $\frac{1}{2} + \frac{4}{8}$

__________ e. $\frac{4}{8} + \frac{2}{4}$

__________ f. $\frac{7}{8} + \frac{6}{16}$

__________ g. $2\frac{1}{8} + 7\frac{1}{4}$

__________ h. $3\frac{2}{4} + 16\frac{1}{8}$

__________ i. $4\frac{2}{4} + 8\frac{2}{8}$

__________ j. $5\frac{1}{8} + 6\frac{2}{16}$

13. Subtract fractions to solve the following problems. Reduce answers to lowest terms. Write your answers in the blanks.

__________ a. $\frac{4}{8} - \frac{3}{8}$

__________ b. $\frac{6}{8} - \frac{2}{8}$

__________ c. $\frac{9}{16} - \frac{4}{16}$

__________ d. $\frac{3}{8} - \frac{1}{4}$

__________ e. $\frac{3}{8} - \frac{1}{8}$

__________ f. $\frac{14}{16} - \frac{7}{8}$

__________ g. $2\frac{3}{4} - 1\frac{1}{4}$

__________ h. $6\frac{1}{8} - 2\frac{1}{2}$

__________ i. $9\frac{2}{4} - 4\frac{1}{2}$

__________ j. $12\frac{6}{8} - 7\frac{1}{8}$

TEST

14. Multiply fractions to solve the following problems. Reduce to lowest terms. Write your answers in the blanks.

__________ a. $\frac{1}{2} \times \frac{3}{4}$

__________ b. $\frac{3}{4} \times \frac{3}{8}$

__________ c. $\frac{3}{2} \times \frac{1}{16}$

__________ d. $\frac{3}{4} \times 6\frac{1}{2}$

__________ e. $6\frac{3}{4} \times 8\frac{3}{4}$

__________ f. $7\frac{1}{8} \times 1\frac{1}{2}$

__________ g. $\frac{77}{16} \times 5$

15. Divide fractions to solve the following problems. Reduce to lowest terms. Write your answers in the blanks.

__________ a. $\frac{7}{8} \div \frac{1}{4}$

__________ b. $3\frac{1}{4} \div 1\frac{5}{6}$

__________ c. $10\frac{1}{8} \div \frac{1}{8}$

__________ d. $4\frac{1}{5} \div 2\frac{1}{3}$

__________ e. $6\frac{7}{8} \div \frac{3}{4}$

__________ f. $2\frac{1}{2} \div 1\frac{3}{5}$

__________ g. $\frac{5}{6} \div \frac{1}{8}$

__________ h. $4\frac{1}{2} \div 3$

TEST

16. Label the place values in the decimal number below.

0. 9 6 1 2 8 5

f.______________________________

e.______________________________

d.______________________________

c.______________________________

b.______________________________

a.______________________________

17. Add decimal numbers to solve the following problems. Set up each problem and show your work. Write your answers in the blanks.

__________a. 3.5 + 5.1 + 7

__________b. 3.4 + 0.206 + 1.74

__________c. $6.86 + $5.05 + $7.90 + $.82

__________d. 57.78 + 0.22 + 0.003 + 74

__________e. 6319 + 95.12 + 0.0713 + 321.07

TEST

18. Subtract decimal numbers to solve the following problems. Set up each problem and check your work. Write your answers in the blanks.

___________a. $6.10 – $2.20

___________b. $5.40 – $2.32

___________c. $7.38 – $.63

___________d. 0.835325 – 0.25

___________e. 0.609375 – 0.359375

19. Multiply decimal numbers to solve the following problems. Set up each problem and show your work. Write your answers in the blanks.

___________a. 2.6 × 4.7

___________b. 0.119 × 0.05

TEST

__________c. 9 × 0.08

__________d. 7.392 × 92.07

__________e. 9.5 × 0.76

20. Divide decimals to solve the following problems. Set up each problem and check your work. Write your answers in the blanks.

__________a. 5.32 ÷ 0.4

__________b. 83.4 ÷ 0.6

__________c. 7.75 ÷ 0.25

TEST

__________d. 0.921 ÷ 0.3

__________e. 0.0225 ÷ 0.15

__________f. 24 ÷ 0.2

__________g. 54 ÷ 0.09

__________h. 63 ÷ 0.007

__________i. 812 ÷ 0.058

TEST

__________ j. 4215 ÷ 0.040

21. Convert the following fractions to decimal numbers and percentages. Give percentages in the nearest whole percent. Write your answers in the blanks.

Decimal Number	Percentage	
__________	__________	a. ${}^{1}/_{3}$
__________	__________	b. ${}^{3}/_{25}$
__________	__________	c. $23\,{}^{3}/_{100}$
__________	__________	d. $11\,{}^{24}/_{1000000}$
__________	__________	e. ${}^{7}/_{16}$
__________	__________	f. ${}^{2}/_{7}$
__________	__________	g. $8\,{}^{13}/_{100000}$
__________	__________	h. ${}^{5}/_{6}$
__________	__________	i. $18\,{}^{3}/_{10}$
__________	__________	j. $5\,{}^{5}/_{1000}$

TEST

22. Convert the following percentages to decimal numbers and fractions. Reduce fractions to lowest terms. Write your answers in the blanks.

Decimal Number	Fraction	
____________	____________	a. 12%
____________	____________	b. 30%
____________	____________	c. 45%
____________	____________	d. 72%
____________	____________	e. 250%

23. Solve the following percentage problems. Write your answers in the blanks.

__________a. If an employer paid a technician $150.00, which is 87 percent of his salary, how much more money would the technician have coming?

__________b. If 12 percent of the solution in the pharmaceutical warehouse has been delivered, how many gallons would be left of the 2100 gallons stored?

__________c. If the cost of cosmetic surgery was $24,000, and the plastic surgeon received $30,000 for the job, what was the percentage of profit?

TEST

24. Solve the following basic ratio and proportion problems. Write your answers in the blanks.

____________a. Convert the ratio 0.5:0.5:2 to the smallest whole-number proportion.

____________b. Convert the ratio 1:1:3 to a decimal proportion.

____________c. What would be the proportion if a mix of 2.5:2.5:5 were doubled?

____________d. What would be the proportion if a 3:3:12 mix were cut to one-third?

____________e. If a mixture of 2 parts liquid A, 4 parts liquid B, and 6 parts liquid C were needed to make a solution, what would the smallest whole-number proportion be?

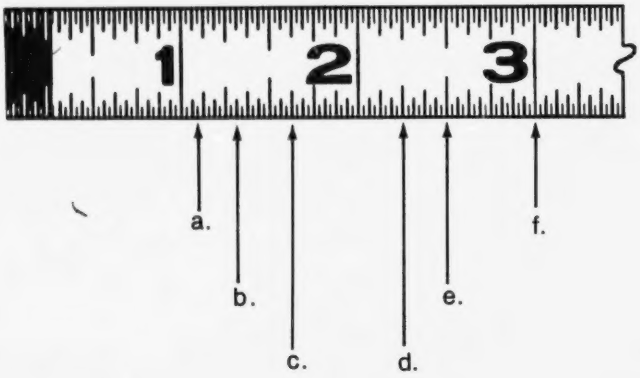
f. Referring to problem e, how many ounces of each liquid would be needed to make 36 ounces of solution?

Ounces of liquid A = ____________

Ounces of liquid B = ____________

Ounces of liquid C = ____________

25. Identify the names of the graduations on the rule illustrated below. Write the correct names in the blanks.



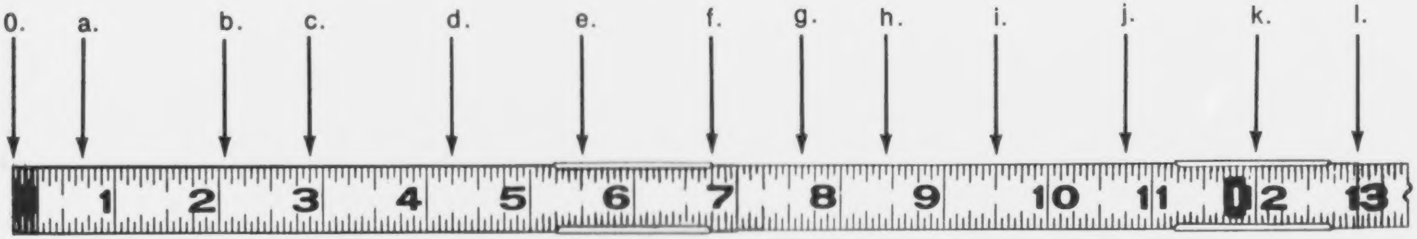
a. ________________________ d. ________________________

b. ________________________ e. ________________________

c. ________________________ f. ________________________

TEST

26. Read the rule illustrated below to the nearest fraction of an inch. Start each reading from the 0 end of the rule. Write the correct graduations in the corresponding blanks.



a. ______________________

b. ______________________

c. ______________________

d. ______________________

e. ______________________

f. ______________________

g. ______________________

h. ______________________

i. ______________________

j. ______________________

k. ______________________

l. ______________________

TEST

27. Convert Roman and Arabic numerals. Write the correct answers in the blanks.

a. Convert the following Roman numerals to Arabic numerals.

1) XIV = ________________
2) XIX = ________________
3) XXIV = ________________
4) LIV = ________________
5) LXI = ________________
6) XVI = ________________
7) XXIII = ________________
8) IV = ________________
9) IX = ________________
10) XXII = ________________

b. Convert the following Arabic numerals to Roman numerals.

1) 50 = ______________
2) 37 = ______________
3) 49 = ______________
4) 74 = ______________
5) 6 = ______________
6) 18 = ______________
7) 22 = ______________
8) 41 = ______________
9) 13 = ______________
10) 35 = ______________

BASIC MATHEMATICS
UNIT I

ANSWERS TO TEST

1. a. 5
b. 10
c. 12
d. 9
e. 6
f. 4
g. 2
h. 11
i. 8
j. 7
k. 3
l. 1
m. 13

2. a. 5
b. 4
c. 1
d. 7
e. 9
f. 3
g. 8
h. 2
i. 6

3. a. Millions
b. Hundred thousands
c. Ten thousands
d. Thousands
e. Hundreds
f. Tens
g. Units

4. a. 11
b. 20
c. 128
d. 1797
e. 21,085

5. a. 2
b. 26
c. 402
d. 342
e. 1119

6. a. 35
b. 612
c. 49,980
d. 348,513
e. 5,568,066

7. a. 12
b. 4
c. 16
d. 2
e. 14, R 131
f. 152, R 400

8. a. P
b. M
c. I
d. M
e. M
f. P
g. P
h. M
i. P
j. I

9. a. $\frac{1}{2}$
b. $\frac{1}{2}$
c. $\frac{7}{16}$
d. $\frac{1}{4}$
e. $\frac{3}{8}$
f. $\frac{1}{4}$
g. $\frac{1}{8}$
h. $\frac{1}{8}$
i. $\frac{3}{4}$
j. $\frac{31}{32}$

10. a. $\frac{7}{2}$
b. $\frac{9}{2}$
c. $\frac{15}{4}$
d. $\frac{25}{2}$
e. $\frac{429}{32}$

11. a. $5\frac{7}{8}$
b. $2\frac{1}{3}$
c. $4\frac{16}{23}$
d. $10\frac{4}{5}$
e. 16

12. a. $\frac{3}{4}$
b. 1
c. $1\frac{1}{4}$
d. 1
e. 1
f. $1\frac{1}{4}$
g. $9\frac{3}{8}$
h. $19\frac{5}{8}$
i. $12\frac{3}{4}$
j. $11\frac{1}{4}$

13. a. $\frac{1}{8}$
b. $\frac{1}{2}$
c. $\frac{5}{16}$
d. $\frac{1}{8}$
e. $\frac{1}{4}$
f. 0
g. $1\frac{1}{2}$
h. $3\frac{5}{8}$
i. 5
j. $5\frac{5}{8}$

ANSWERS TO TEST

14. a. $\frac{3}{8}$
b. $\frac{9}{32}$
c. $\frac{3}{32}$
d. $4\frac{7}{8}$
e. $59\frac{1}{16}$
f. $10\frac{11}{16}$
g. $24\frac{1}{16}$

15. a. $3\frac{1}{2}$
b. $1\frac{17}{22}$
c. 81
d. $1\frac{4}{5}$
e. $9\frac{1}{6}$
f. $1\frac{9}{16}$
g. $6\frac{2}{3}$
h. $1\frac{1}{2}$

16. a. Tenths
b. Hundredths
c. Thousandths
d. Ten thousandths
e. Hundred thousandths
f. Millionths

17. a. 15.6
b. 5.346
c. $20.63
d. 132.003
e. 6735.2613

18. a. $3.90
b. $3.08
c. $6.75
d. 0.585325
e. 0.25

19. a. 12.22
b. 0.00595
c. 0.72
d. 680.58144
e. 7.22

20. a. 13.3
b. 139
c. 31
d. 3.07
e. 0.15
f. 120
g. 600
h. 9000
i. 14,000
j. 105,375

21. a. 0.3333; 33%
b. 0.12; 12%
c. 23.03; 2303%
d. 11.000024; 1100%
e. 0.4375; 44%
f. 0.2857; 29%
g. 8.00013; 800%
h. 0.8333; 83%
i. 18.3; 1830%
j. 5.005;501%

22. a. 0.12; $\frac{3}{25}$
b. 0.30; $\frac{3}{10}$
c. 0.45; $\frac{9}{20}$
d. 0.72; $\frac{18}{25}$
e. 2.50; $2\frac{1}{2}$

23. a. $22.41
b. 1848 gallons
c. 20 percent

24. a. 1:1:4
b. 0.33:0.33:1 or any other proportional decimal
c. 5:5:10
d. 1:1:4
e. 1:2:3
f. 6 ounces liquid A, 12 ounces of liquid B, 18 ounces of liquid C

25. a. Thirty-seconds
b. Sixteenths
c. Eighths
d. Quarters or fourths
e. Halves
f. Inches

26. a. $\frac{11}{16}$"
b. $2\frac{1}{16}$"
c. $2\frac{7}{8}$"
d. $4\frac{1}{4}$"
e. $5\frac{1}{2}$"
f. $6\frac{3}{4}$"
g. $7\frac{5}{8}$"
h. $8\frac{7}{16}$"
i. $9\frac{1}{2}$"
j. $10\frac{3}{4}$"
k. 12" or 1′–0"
l. 13" or 1′–1"

ANSWERS TO TEST

27. a. 1) 14
2) 19
3) 24
4) 54
5) 61
6) 16
7) 23
8) 4
9) 9
10) 22

b. 1) L
2) XXXVII
3) XLIX
4) LXXIV
5) VI
6) XVIII
7) XXII
8) XLI
9) XIII
10) XXXV

OBSERVATION AND DOCUMENTATION
UNIT III

SUGGESTED ACTIVITIES

I. Unit contents

- A. Objective sheet
- B. Suggested activities
- C. Supplements
    - 1. Supplement #1 — Document Observations
    - 2. Supplement #2 — Crossword Puzzles
    - 3. Supplement #3 — Apply Health-Related Terminology
    - 4. Supplement #4 — Health-Related Terminology Bingo
    - 5. Supplement #5 — Health-Related Terminology Word Hunt
    - 6. Supplement #6 — Review Health-Related Terminology
- D. Transparency masters
    - 1. TM #1 — Word Parts
    - 2. TM #2 — Word Parts (Continued)
- E. Answers to supplements
- F. Information sheet
- G. Assignment sheets
    - 1. Assignment Sheet #1 — Divide and Define Health-Related Terms
    - 2. Assignment Sheet #2 — Use a Dictionary to Research Health-Related Terminology
- H. Answers to assignment sheets
- I. Test
- J. Answers to test

SUGGESTED ACTIVITIES

II. Instructor's guide

A. Order materials to supplement unit.

1. Film — *Written Communications*, 28 minutes, 1976. Available from National A-V Center, 8700 Edgeworth Drive, Capitol Heights, Maryland 20743-3701. Film covers four types of written communication and their elements: letters, forms, memos, and reports. Discussion centers on basic techniques of organization, language, style, and thoroughness.

   (NOTE: This film is available on a free-loan basis to Oklahoma instructors. Oklahoma teachers may order from the State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, Film Library, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364. Out-of-state teachers must order from the address listed with the film.)

2. Filmstrips — *Medical Terminology I and II*, Damon Instructional Systems. The Damon system uses word association that makes learning and retaining medical terminology easy. Filmstrip includes 350 roots, prefixes, and suffixes that combine to form over 11,000 medical terms. Teaching time: 14 hours.

   (NOTE: Order from Damon Instructional Systems, 80 Wilson Way, Westwood, Maryland 02090. Telephone 1-800-348-0025.)

3. An up-to-date medical or nursing dictionary

4. Any medical terminology references

5. Medical terminology computer discs for remedial instruction or review

6. Transparencies and competency profiles

   (NOTE: Transparencies and competency profiles for this manual are available from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

B. Introduce unit.

- Explain that any health-related job requires some knowledge of medical terminology.
- Discuss the legal implications that can occur with documentation, and stress the accuracy of documentation.
- Write a sentence on the board, using various medical terminology words. Show the students how many words can be broken up for definition purposes even if the student may not have seen those words before.

SUGGESTED ACTIVITIES

- Discuss why many health care workers find charting and documentation tedious and complain about the paper work. Point out that many incidents or accidents can be avoided through correct documentation techniques.
- Stress legibility and accuracy of documentation.
- Discuss the policies and procedures of your local health care facilities pertaining to documentation.
- Encourage students who are poor spellers to use the dictionary frequently to check their spelling.

C. Provide students with unit.

D. Discuss unit and specific objectives.

1. Use Information Sheet, Section I, to discuss terms and definitions associated with observation and documentation.
    - Use a health-related dictionary to explain prefixes and suffixes and how they are combined to form health-related terminology. Show Transparencies #1 and #2.
    - Give examples of prefixes and suffixes, and put them together to show how several may be put together to form a combined word.
    - Divide the class into groups. Have each group set up a role-playing situation in which subjective and objective symptoms are exhibited. Ask other groups to identify those symptoms and determine if they are subjective or objective.
2. Use Information Sheet, Sections II - VII, to discuss purposes and guidelines for documentation.
    - Stress the need for readability of any written information.
    - Show the students examples of good and poor documentation techniques. Show examples from the fields your students have an interest in such as dental, veterinarian, etc.
    - Ask a medical record technician, a physician, a medical receptionist, a nurse, etc.—representatives from a variety of areas—to discuss documentation in their job tasks. Ask them to point out what documentation is critical in their own areas.
    - Write each of the senses on several slips of paper. Fold each slip and place it in a container. Have each student draw a slip out and read the sense selected. Ask the student to give an example of an observation that might be made based on the use of that specific sense.
    - Use Supplement #1 to help students practice identifying subjective and objective symptoms and to document information.

SUGGESTED ACTIVITIES

3. Use Information Sheet, Sections VIII - X, to discuss prefixes, suffixes, and abbreviations.

   - Use Supplement #2 to review the information in the unit.
   - Use the Damon Instructional System, if you have it, to reinforce learning.
   - Point out that some word parts can be at the beginning, in the middle, or at the end of a word.

     EXAMPLES: Blastoma
     Erythroblastosis
     Spermatoblast

   - Give the students examples of words combining the prefixes and suffixes; then give the students words they can break down for a definition.
   - Give examples of terms that use the prefixes and suffixes provided.
   - Use Supplement #3 to have the students look at hypothetical situations and research health-related terms.
   - Use Supplement #4 to reinforce learning. As well as playing the bingo game, have the students also supply the meaning for the term.
   - Use Supplement #5 for identification of the unit information.
   - Give students a list of terms that are related to their own occupational interests and that contain combining forms. Have the students look up and define the terms.
   - Use Supplement #6 as an assignment or, if you wish, as a review for the test.
   - Discuss the need to know abbreviations and point out how often abbreviations are used. Caution the students against making their own abbreviations.
   - Have students complete Assignment Sheets #1 and #2. These assignments will give the students practice with health-related terminology and get them accustomed to a medical dictionary.

E. Give test.

F. Reteach and retest if necessary.

G. Complete appropriate section of students' competency profiles.

SUGGESTED ACTIVITIES

III. Unit references

- A. *Mosby's Medical and Nursing Dictionary*, 2nd ed. St. Louis, Missouri: The C. V. Mosby Company, 1986.
- B. Rogers, Helen V. *Practical Nursing: Volume II*, rev. by Jamee Reid-Sloan. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1983.

OBSERVATION AND DOCUMENTATION
UNIT II

SUPPLEMENT #1 — DOCUMENT OBSERVATIONS

Observing and documenting important information is important in every health field. One of the important characteristics of the person working in the health field is to be observant. All senses can be helpful in gathering important data to help diagnose and treat health problems.

In this supplement you are given three hypothetical case studies of patients with health care problems. In each case you are to select the most important observations and write them in the space provided. Place an "S" by the subjective symptoms and an "O" by the objective symptoms.

CASE #1

Mrs. B. has come into the clinic to see Dr. X. with a complaint of chest pain. Mrs. B. is very talkative in a very low, gravelly voice. She is continuously wringing her hands and has several tissues that she uses occasionally to wipe her red, irritated eyes and nose. Her temperature is 101°F, her pulse is 96 beats per minute, and her respirations are very shallow and rapid. She complains of chest pain and hoarseness.

CASE #2

Mrs. S. was admitted to the hospital for diagnostic tests. Mrs. S. is 5′2″ and weighs 325 pounds. When you enter her room, she is complaining of being hot and uncomfortable in the bed. Her face is flushed, and her skin is hot and dry to the touch. She complains of sharp, constant pain in her lower abdomen; and she grimaces each time the abdomen is touched or when she rolls from side to back.

SUPPLEMENT #1

CASE #3

Mr. O. has come to the dental office with complaints of pain in his lower-right jaw. He states that he thinks it is one of his back molars that hurts. The right side of his face is swollen, and one of the lymph glands under the jaw is enlarged. Mr. O. tells you that the whole lower-right side of his face has ached constantly for the last three days and that his teeth have been very sensitive.

OBSERVATION AND DOCUMENTATION
UNIT II

SUPPLEMENT #2 — CROSSWORD PUZZLES

Review your knowledge of medical prefixes, suffixes, abbreviations, and terms by completing the crossword puzzles. Use the clues and your information sheet.

PUZZLE #1

ACROSS

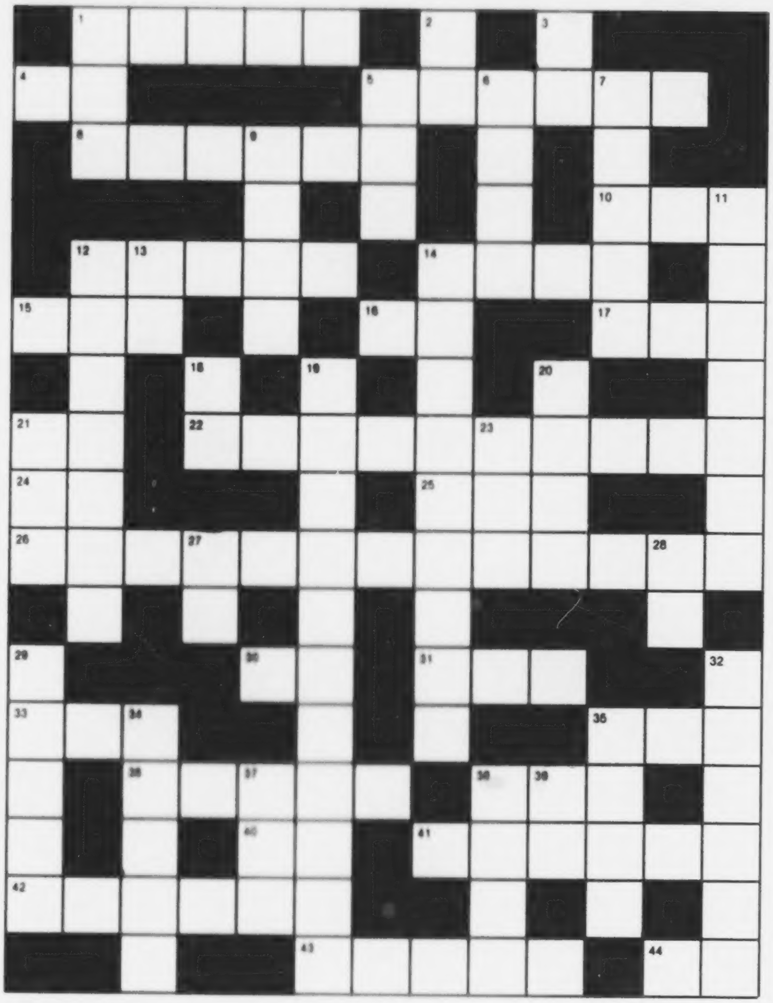
1. Prefix meaning *scanty* or *few*
4. Physical therapist (abbr)
5. Meaning of prefix *myo-*
8. Suffix meaning *flow* or *excessive discharge*
10. Tablet (abbr)
12. Prefix meaning *spleen*
14. Prefix meaning *straight*
15. Prefix meaning *muscle*
16. Obstetrics (abbr)
17. Meaning of prefix *exo-*
21. Blood pressure (abbr)
22. Symptom that is not apparent or able to be seen by observer
24. Pronoun
25. Cerebrovascular accident (abbr)
26. Act of providing substantial support or factual statements in writing
30. Intravenous (abbr)
31. By way of
33. Meaning of prefix *neo-*
35. Kingly title
36. Prefix meaning *tissue*
38. Garden tool
40. 2 Roman
41. Vein or artery
42. Prefix meaning *joint*
43. Suffix meaning *birth*
44. Of each (abbr)

DOWN

1. Prefix for *ear*
2. Genitourinary (abbr)
3. Cubic centimeter (abbr)
5. Prefix meaning *abnormal*
6. Not sweet
7. Prefix meaning *stone* or *calculus*
9. To pay close attention to
11. Meaning of prefix *inter-*
12. Recognizable change in the physical or mental state
13. Per os (abbr)
14. Symptom that is apparent or able to be seen
18. Bedtime (abbr)
19. Act of gathering facts and noting what is happening; what is seen or noticed
20. At once
21. Twice per day (abbr)
23. Cerebrovascular accident (abbr)
27. You and me
28. Prefix meaning *eye* or *vision*
29. Prefix meaning *inside*
32. Prefix meaning *armpit*
34. Meaning of prefix *leuko-*
35. Respirations (abbr)
37. Masculine title of respect
38. Prefix meaning *blood*
39. Mouth

SUPPLEMENT #2

PUZZLE #1



SUPPLEMENT #2

PUZZLE #2

ACROSS

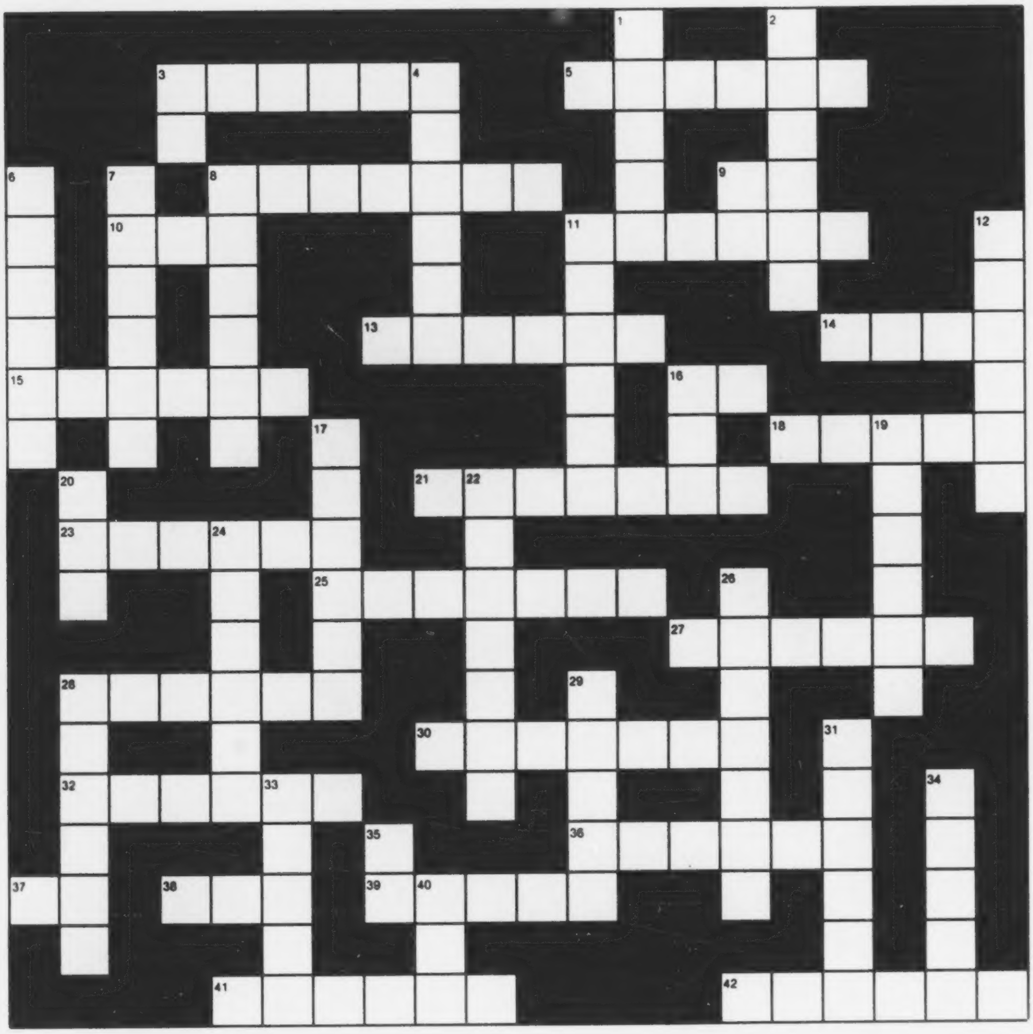
3. Suffix meaning *flow, excessive discharge*
5. Prefix meaning *kidney*
8. Prefix meaning *neck*
9. Prefix meaning *without, lack of*
10. Prefix meaning *outside*
11. Prefix meaning *heart*
13. Prefix meaning *stomach*
14. Prefix meaning *many, too much*
15. Prefix meaning *black*
16. Genitourinary (abbr)
18. One of the senses
21. Meaning of *a.m.*
23. Suffix meaning *nourishment, development*
25. Recognizable change in the physical or mental state
27. Beginning of a word
28. Prefix meaning *membranes of lungs*
30. Suffix meaning *abnormal discharge*
32. Suffix meaning *creation of an artificial opening*
36. Prefix meaning *joint*
37. Weight (abbr)
38. Prefix meaning *blood*
39. Sense that uses nose
41. Postoperative (abbr)
42. Suffix meaning *plastic* or *surgical repair*

DOWN

1. Suffix meaning *decrease*
2. Prefix meaning *cranium*
3. Operation (abbr)
4. Meaning of *ax*
6. Prefix meaning *air, lungs*
7. Suffix meaning *enlargement*
8. Prefix meaning *heart*
9. Prefix meaning *toward*
11. Prefix meaning *cancer*
12. Meaning of O_2
16. Gynecology (abbr)
17. Prefix meaning *nature*
19. Ending of a word
20. Prefix meaning *ear*
22. Prefix meaning *ovary*
24. Prefix meaning *false*
26. Prefix meaning *suture* or *sew*
28. Prefix meaning *rectum*
29. Suffix meaning *birth*
31. Suffix meaning *fear*
33. Prefix meaning *breast*
34. Sense using eyes
35. Hour of sleep (abbr)
40. Prefix meaning *muscle*

SUPPLEMENT #2

PUZZLE #2



SUPPLEMENT #2

PUZZLE #3

ACROSS

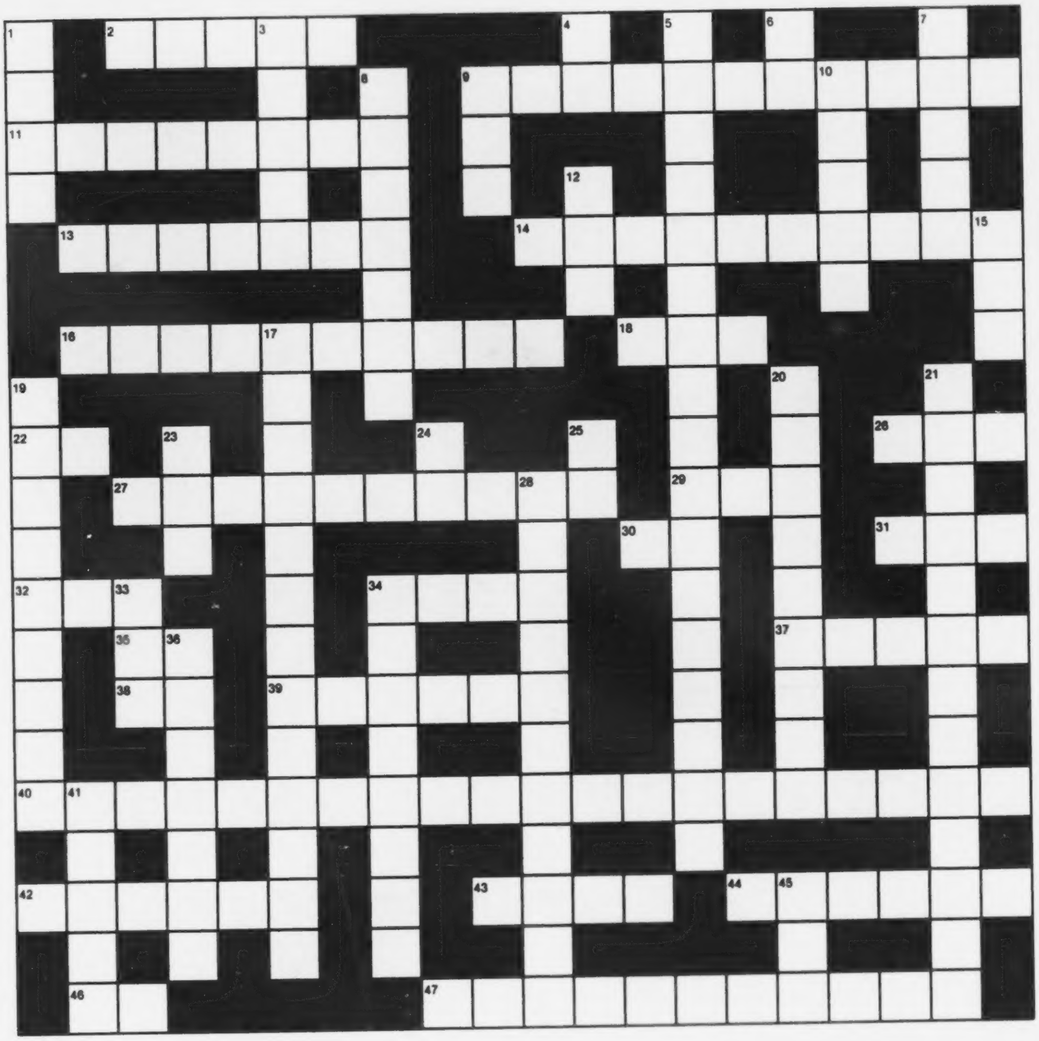
2 Prefix meaning *scanty, few*
9. Meaning *c/o* (two words)
11. Meaning of *ax*
13. Prefix meaning *red*
14. Meaning of *C*
16. Symptom that cannot be seen
18. Night (abbr)
22. Blood pressure (abbr)
26. Every other day (abbr)
27. Temperature scale
29. Red blood cell (abbr)
30. Every day (abbr)
31. Prefix meaning *ear*
32. Cerebrovascular accident (abbr)
34. Prefix meaning *sac*
35. Physical therapy (abbr)
37. Excessive or above
38. Operating room (abbr)
39. Prefix meaning *against*
40. Meaning of *EEG*
42. Yellowish fatty plaque
43. 60 minutes
44. Meaning of *liq*
46. Obstetrics (abbr)
47. Act of gathering data and noting facts and happenings

DOWN

1. At once (abbr)
3. Instrument used to record
4. Bowel movement (abbr)
5. Meaning of *ECG*
6. Gastrointestinal (abbr)
7. Noise
8. Meaning of *po* (two words)
9. Prefix meaning *head*
10. Prefix meaning *nerve*
12. Blood
15. Prefix meaning *upon* or *after*
17. Meaning of *ER* (two words)
19. Symptom that can be seen
20. Prefix meaning *brain*
21. Act of providing substantial support or factual statements in a written form
23. Prefix meaning *abnormal*
24. Every hour (abbr)
25. Weight (abbr)
28. Meaning of *IV*
33. Prefix meaning *detached*
34. Suffix meaning *puncture of a cavity*
36. Prefix meaning *trachea*
41. Prefix meaning *stone, calculus*
45. Suffix meaning *specialist*

SUPPLEMENT #2

PUZZLE #3



OBSERVATION AND DOCUMENTATION
UNIT II

SUPPLEMENT #3 — APPLY HEALTH-RELATED TERMINOLOGY

Persons in every health field must be able to use the correct health-related terminology. By putting prefixes and suffixes together and knowing their meanings, you can develop a large vocabulary of terms used in health occupations.

In this supplement you are given hypothetical information related to clients who have health problems and need care. Break down each bold-faced term into its combining parts, then write what each word part means. Use the information in this unit and in your health-related dictionary to fill in the blanks.

EXAMPLE: Your aunt is scheduled for surgery. The surgical procedure to be performed is a **cholecystectomy**, which is chole- (gall), cyst- (bladder), -ectomy (removal of) ______________________________

Your aunt asks you if this could be related to the last time she was admitted to the hospital. She tells you that her diagnosis then was **nephrolithiasis**, which is nephro- (kidney), lithiasis (calculi)

CASE #1

a. Jane Stevens, one of your Allied Health classmates, is admitted to the hospital with acute abdominal pain. After assessment, Dr. Johnson finds that Jane has **appendicitis**. This condition is ______________________________

b. Prior to surgery some routine lab work is done. The results show that Jane has **leukocytosis**. This is ______________________________

c. After surgery, Dr. Johnson told Jane's parents that the appendix showed signs of **atrophy**. This is ______________________________

d. Jane is now back from the recovery room and doing well. The nurse records on Jane's chart that for four hours postsurgically she has had **anuria**. This is ______________________________

SUPPLEMENT #3

CASE #2

a. Alan Keaton, who sits next to you in English class, has been complaining of feeling very tired. After seeing the doctor, he is diagnosed as having mononucleosis. Alan is put on bedrest because a common result of this condition is **hepatomegaly**. This is ________

____

b. Another possible result of mononucleosis is **splenomegaly**, which is ________________

____

c. Alan had splenomegaly, and had to have a **splenectomy**, which is ________________

____

d. After his surgery, the nurse said Alan had signs of **cyanosis**. This is ________________

____

CASE #3

a. Robert Hilley, the quarterback on the football team, was injured during last week's game against the Tigers. He was taken to the local hospital. The first injury noted was a large **hematoma** on his right cheek. This is ________________________________

b. Robert also has gross swelling of his nose. His doctor suggested that Robert may need to have a **rhinoplasty** after the swelling is reduced. This is ________________________

____

c. While in the hospital, Robert was discovered to be suffering from **adenocarcinoma**. This is

____

CASE #4

Terrel, a long-distance runner on the school track team, has been having trouble with his right knee. His doctor has ordered an **arthroscopy**. This is ________________________

CASE #5

Your older sister is pregnant, and her gynecologist is having her come in for an **amniocentesis**. This is ____

SUPPLEMENT #3

CASE #6

Jeff, who has recently transferred to your school, has a small scar on his neck. You ask him about it, and he explains that when he was younger he had a **tracheostomy**. This is ______

____

CASE #7

Your uncle has had heart trouble for some time, but it seems to be getting worse. He is going to have an **angiogram** made. This is ____

CASE #8

Your friend Glen goes to the dentist, and she tells him that he has **gingivitis**. This is ______

____

CASE #9

Your dog Sheba goes to the veterinarian for her annual physical. The vet tells you that Sheba has heartworms, and it has caused her to have **cardiomegaly**. This is ________________

____

CASE #10

An elderly friend of yours has difficulty walking without a limp. When you ask if she has injured herself, she explains that she has **osteoarthritis**. This is ____________________

____

OBSERVATION AND DOCUMENTATION
UNIT II

SUPPLEMENT #4 — HEALTH-RELATED TERMINOLOGY BINGO

To help students remember prefixes, suffixes, and abbreviations, use bingo games. Copy the following bingo grids and provide each student with a single copy. You may want to make more grids depending on how many students you have. Using the lists of meanings of the prefixes, suffixes, and abbreviations, give the meaning for each and let students use lemon drops, jelly beans, red hots, or some other edible to place on card. The first student to bingo must repeat the prefix, suffix, or abbreviation and give the meaning. Use an appropriate reward for the student.

SUPPLEMENT #4

ad lib	Nephro—	Poly—	bid	-uria
Lipo—	PT	-cyte	Intra—	DC
IV	Inter—	FREE	Myo—	CVA
c̄	-rrhaphy	-ostomy	Hypo—	qid
-ist	ac	-stasis	Neuro—	ER

SUPPLEMENT #4

RBC	Procto—	BP	per	-oma
-algia	Psych—	TPR	Orth—	Osteo—
Gastro—	Masto—	FREE	cc (c.c.)	qod
āā	-ectomy	noc	-emia	-trophy
ac	0_2	tid	ECG (EKG)	STAT

SUPPLEMENT #4

GU	wt.	-itis	Pseudo—	Peri—
TLC	-ectomy	-centesis	Rhino-	Chol-
-algia	noc	FREE	BM	surg.
h	-gram	Oto—	Splen-	F
lab.	-emia	Litho—	Apo-	WBC

SUPPLEMENT #4

-cyte	Peri—	Amnio-	$\bar{q}$	-ectomy
pre-op	amb.	po	-orrhea	GI
OB	Poly—	FREE	Hypo-	Oligo-
qod	-plasty	Physio—	-ostomy	-penia
Pneumo—	Orth-	BMR	EEG	amt.

SUPPLEMENT #4

a.m.	-ptosis	s̄	GI	prn
Mal—	-uria	Brady-	Oophoro-	-oma
-rrhaphy	Erythro—	FREE	per	c̄
-scope	H_2O	Angio-	gyn.	liq
Histo—	Diplo-	c/o	RUQ	Encephalo-

SUPPLEMENT #4

Derm-	hs	min.	-gram	Dys-
Hydro—	OR	ax.	LUQ	-stasis
et, +, &	Hyper—	FREE	-plasty	abd.
-algia	fld.	Ped.	EEG	Melano—
-megaly	Lipo—	LLQ	Hepato—	Epi—

SUPPLEMENT #4

-ology	-orrhea	qd	Endo-	-uria
Tracheo-	r or resp	CA or ca	Orchi—	CVA
-trophy	Hemo—	FREE	Exo—	RLQ
Gastro—	prn	Phleb(o)—	-osis	-phobia
BMR	Inter—	s̄	-oid	Hydro-

SUPPLEMENT #4

Rhino—	-natal	tid	-ist	PT
-itis	cc (c.c.)	-megaly	prn	-ptosis
h	ER	FREE	Cyst-	Apo-
I & O	Pseudo-	Myo—	-rrhaphy	hs
Hepato—	Pyelo—	approx.	-scopy	amb

OBSERVATION AND DOCUMENTATION
UNIT II

SUPPLEMENT #5 — HEALTH-RELATED TERMINOLOGY WORD HUNT

On the next page, find and circle the following fifty prefixes, suffixes, and abbreviations used in health-related terminology. Some are horizontal on the grid, some are vertical, and some are diagonal. Ignore hyphens in this exercise.

ABBREVIATIONS

ad lib
ax
BMR
CVA
fld
GI
noc
NPO
OB
prn
TLC

PREFIXES

amnio-
cardio-
cervico-
cyan-
diplo-
endo-
epi-
hydro-
hyper-
leuko-
lipo-
mal-
masto-
neo-
nephro-
oligo-
osteo-
pedi-
procto-
pseudo-
pyelo-

SUFFIXES

-algia
-cyte
-ectomy
-ist
-itis
-natal
-oid
-ology
-oma
-orrhea
-osis
-ostomy
-penia
-plasty
-ptosis
-scope
-stasis
-trophy

SUPPLEMENT #5

T	S	Y	J	B	B	C	T	V	X	Z	Y	S	N	E	P	H	R	O	C	C
F	O	T	D	W	E	N	D	O	T	D	O	S	T	O	M	Y	X	B	F	R
J	S	B	I	R	T	R	N	O	C	T	N	S	C	Z	X	N	T	R	S	V
S	T	B	P	N	C	F	G	C	R	T	E	C	T	O	M	Y	X	R	Y	Z
A	E	B	L	N	D	G	I	T	C	A	M	N	I	O	P	H	E	R	L	S
C	O	D	O	E	T	R	O	P	H	Y	F	Z	G	Y	X	P	T	A	V	N
O	R	T	N	C	V	A	U	A	V	A	O	M	A	C	Y	A	T	T	I	M
R	O	S	V	C	A	R	D	I	O	P	T	S	N	H	O	A	B	C	C	D
C	B	I	L	P	I	B	D	S	N	O	S	W	I	N	N	D	A	F	L	D
N	D	A	F	L	I	Y	A	W	A	I	Y	T	O	K	T	S	M	Y	O	S
A	M	N	A	L	N	T	O	N	T	E	A	N	C	Y	A	N	P	N	E	I
E	R	C	D	O	M	E	B	I	A	Z	A	N	A	C	D	A	S	E	F	G
J	Z	A	H	P	S	E	U	D	O	I	R	B	P	N	Q	J	T	K	L	M
P	E	D	I	A	O	L	I	G	O	P	O	C	A	X	H	I	A	O	D	L
J	J	E	R	N	I	N	B	V	O	Q	S	A	F	L	G	N	S	G	F	I
A	F	P	L	A	S	T	Y	S	R	V	C	I	M	B	I	A	I	B	F	P
U	G	W	O	T	O	R	R	H	E	A	W	S	F	I	T	H	S	H	H	O
E	H	H	P	I	J	K	B	O	T	N	C	T	E	O	L	O	G	Y	F	H
C	Y	K	T	J	V	U	T	B	B	I	L	D	L	P	Y	E	L	O	I	W
D	D	L	O	V	W	S	E	M	S	Y	I	H	R	L	N	L	K	C	M	O
V	R	U	S	M	A	W	B	R	T	P	C	T	P	R	O	C	T	O	E	W
I	O	N	I	M	A	X	O	N	E	A	T	Y	Z	Z	O	N	O	K	H	K
O	S	O	S	S	C	O	P	E	B	Y	B	I	R	Q	P	P	O	S	V	D
X	R	O	Q	P	X	A	Y	W	T	L	C	E	M	O	E	E	S	Y	I	S
Y	E	M	T	A	L	G	I	A	F	C	Y	T	E	H	H	N	F	O	Y	S
N	T	A	O	I	D	A	S	L	E	U	K	O	C	S	N	I	L	A	S	P
A	I	N	T	C	E	R	V	I	C	O	A	D	G	E	G	A	B	N	P	O

OBSERVATION AND DOCUMENTATION
UNIT II

SUPPLEMENT #6 — REVIEW HEALTH-RELATED TERMINOLOGY

DIRECTIONS: Read each of the following questions or statements and the choices that follow them. Determine which choice most correctly answers the question or completes the statement. Write the correct letters in the blanks.

_____1. The patient is having pain upon urination. The medical term for this condition is _____________.

a. Dysuria

b. Anuria

c. Malurine

d. Disurine

_____2. The chart shows the patient has been admitted with a symptom of **bradycardia**. This symptom is _____________.

a. Rapid heartrate

b. Slow heartrate

c. Irregular heartrate

d. Cessation of heartrate

_____3. A condition of cardiovascular impairment may be indicated by the symptom of **cyanosis**. A symptom of this condition is indicated by the color _____________.

a. Blue

b. Yellow

c. Green

d. Red

_____4. During a surgical procedure one of the main challenges of the surgeon is to control or stop excessive bleeding. Stopping excessive bleeding is known as _____________.

a. Hepatostasis

b. Hypohemato

c. Hemostasis

d. Anastasis

SUPPLEMENT #6

______5. Inflammation of the gallbladder is known as ____________.

a. Colocystitis

b. Cystitis

c. Cholecystitis

d. Nephrocystitis

______6. The patient's chart shows that the admitting diagnosis was a CVA. **CVA** is an abbreviation for ____________.

a. Cardiovascular accident

b. Cerebrovascular accident

c. Cardiovessel aneurism

d. Cerebrovenule accident

______7. The patient is to have a moist warm pack to the lower back four times a day. The abbreviation for four times a day is ____________.

a. ftd

b. qod

c. fod

d. qid

______8. Following surgery, the surgeon has ordered pain medication for the patient to be given prn. **PRN** is the abbreviation for ____________.

a. Every two hours

b. Every four hours

c. When necessary

d. When awake

______9. A blood condition known as leukocytopenia may be acute and life-threatening. **Leukocytopenia** is a medical term for ____________.

a. Increase in red cells

b. Decrease in white cells

c. Increase in white cells

d. Decrease in red cells

SUPPLEMENT #6

______10. Repairing or reshaping the nose may be needed to restore respiratory function or for cosmetic purposes. The medical term for this procedure is known as ______________.

a. Rhinoplasty

b. Rhinoostomy

c. Rhinorrhaphy

d. Rhinotrophy

______11. Pyelonephritis is a serious condition caused from the invasion of bacteria into the system. **Pyelonephritis** is the medical term for ______________.

a. Inflammation into the bony pelvis

b. Inflammation of the kidney pelvis

c. Decrease in the structure of the bony pelvis

d. Increase in the cells of the kidney

______12. A tumor mass made up of fatty tissue is known as a ______________.

a. Myoma

b. Neuroma

c. Lipoma

d. Histoma

______13. The prefix **hyper** means ______________.

a. Under or below

b. Between

c. Excessive or above

d. Outside

______14. If you were assigned to turn a patient every hour, you might see this abbreviation: ______________.

a. qhr

b. qh

c. hr

d. hs

SUPPLEMENT #6

_____15. When patient care and intervention are needed at once, the abbreviation used is _____________.

a. IM

b. NOW

c. STAT

d. AO

_____16. A colostomy may be permanent or temporary, depending on the purpose of the procedure. A **colostomy** is _____________.

a. A new opening into the large intestine

b. A new opening into the gallbladder

c. An enlargement of the colon

d. A repair of the gallbladder

_____17. The patient's condition has become critical. One of the symptoms exhibited is anuria. **Anuria** is _____________.

a. Absence of urine formation

b. Excessive formation of urine

c. Discomfort upon urination

d. Blood appearing in the urine

_____18. Many patients are able to be mobile now due to new methods for joint repair and replacement. This procedure is known as _____________.

a. Athroplasty

b. Arthroostomy

c. Arthroplasty

d. Osteootomy

_____19. A serious, life-threatening condition is encephalitis. **Encephalitis** is _____________.

a. Inflammation of the red blood cells

b. Inflammation of the brain

c. Inflammation of the colon

d. Inflammation of the joints

SUPPLEMENT #6

______20. The patient can have *nothing by mouth* prior to surgery. The abbreviation for this intervention is ______________.

a. NBM

b. PO

c. NPO

d. NOM

______21. The patient is scheduled to have an EEG in the morning. An EEG is ______________.

a. An x ray of the heart

b. An x ray of the brain

c. A brain wave tracing

d. A blood vessel tracing

______22. The patient is to be ambulated *twice per day*. This may be abbreviated as ______________.

a. tid

b. qid

c. bid

d. ted

______23. The patient needs to take medication before meals. This may be abbreviated as ______________.

a. pc

b. ac

c. ap

d. cp

______24. A reshaping of the breast tissue is known as a ______________.

a. Mammotrophy

b. Mammostomy

c. Mastectomy

d. Mammoplasty

SUPPLEMENT #6

_____25. Hepatomegaly is one of the symptoms of hepatitis. **Hepatomegaly** is _____________.

a. Enlargement of the liver

b. Hemorrhage from the liver

c. Deterioration of the liver

d. Shrinking of the liver

_____26. Hydrophobia is a common condition. **Hydrophobia** is _____________.

a. Fear of cats

b. Fear of heights

c. Fear of water

d. Fear of being in a closed area

_____27. An **oophorectomy** is _____________.

a. Removal of an ovary

b. Removal of an eye

c. Removal of a tumor

d. Removal of a stone

_____28. An instrument used for examining the ear is a/an _____________.

a. Autoscope

b. Otoscope

c. Opthalmoscope

d. Rectoscope

_____29. A traumatic wound may call for a myorrhaphy. A **myorrhaphy** is _____________.

a. Suturing or sewing of the muscle

b. Repairing or reshaping of the bone

c. Making a new opening into the dermis

d. Removal of muscle tissue

SUPPLEMENT #6

_____30. One of the symptoms of diabetes mellitus is polyuria. **Polyuria** is ____________.

a. Increased output of urine

b. Increased intake of fluids

c. Decreased intake of fluids

d. Decreased output of urine

_____31. The suffix **-ptosis** means ____________.

a. Breaking or bursting

b. Growth

c. Flow or discharge

d. Falling or dropping

_____32. The prefix **adeno-** means ____________.

a. Tissue

b. Gland

c. Sac

d. Pelvis

_____33. The prefix **cervico-** means ____________.

a. Genital

b. Neck

c. Cyst

d. Muscle

_____34. The prefix **chole-** means ____________.

a. Colon

b. Intestine

c. Sac

d. Gall

SUPPLEMENT #6

______35. The prefix **dys-** means ____________.

a. Apart

b. Painful

c. Against

d. Away from

______36. The prefix **erythro-** means ____________.

a. Gland

b. Cell

c. Red

d. Outside

______37. The prefix **intra-** means ____________.

a. Excessive or above

b. Under or below

c. Within or inside

d. Between

______38. The prefix **neo-** means ____________.

a. Nerve

b. New

c. Kidney

d. Bad or abnormal

______39. The prefix **pedi-** means ____________.

a. Joint

b. Child

c. Bones

d. Around or surround

SUPPLEMENT #6

_____40. The prefix **pseudo-** means _____________.

a. Mind

b. Fear

c. Nature

d. False

_____41. The suffix **-centesis** means _____________.

a. Cutting into

b. Decrease

c. Condition of

d. Puncture of a cavity

_____42. The prefix **orchi-** means _____________.

a. Ovary

b. Bone

c. Testicle

d. Eye

_____43. The suffix that means **condition of** is _____________.

a. -itis

b. -oma

c. -ist

d. -osis

_____44. An incision into the bladder to remove stones is a _____________.

a. Nephrostomy

b. Lithocystotomy

c. Lithostomy

d. Lithectomy

SUPPLEMENT #6

_____45. The prefix that means **yellowish fatty plaque** is _____________.

a. Lipo-

b. Histo-

c. Athero-

d. Arterio-

_____46. If a patient cannot or should not have a substance, it may be _____________ indicated.

a. Anti-

b. Counter-

c. Ante-

d. Contra-

_____47. The surgical incision into a vein is called a _____________.

a. Phlebotomy

b. Veinotomy

c. Arteriotomy

d. Phlebectomy

_____48. A lighted instrument that enables the physician to observe the inside of the rectum is a _____________.

a. Proctoscope

b. Endoscope

c. Coloscope

d. Gastroscope

_____49. A subjective symptom of nephrolithiasis is _____________.

a. Pain in lower back

b. Stones in urine

c. Smoky appearance of urine

d. Acid odor of urine

SUPPLEMENT #6

______50. ______________ is a subjective symptom.

a. Red, irritated eyelids

b. Headache

c. Clammy, cold skin

d. Raised red rash

______51. Two *senses* used in making observations of a urine sample would be ______________.

a. Talking and touching

b. Listening and smelling

c. Seeing and touching

d. Seeing and smelling

______52. One of the important general guidelines in reporting and documenting objective and subjective symptoms is ______________.

a. Use patient's exact words when possible to describe symptoms

b. Ask family to describe the patient's symptoms

c. Check with co-worker and get description of symptoms

d. Describe in your own words what you think is wrong with the patient

______53. ______________ is an objective symptom.

a. Tingling in feet and ankles

b. Pain in legs

c. Swelling of eyelids and lips

d. Dizziness

OBSERVATION AND DOCUMENTATION
UNIT III

ANSWERS TO SUPPLEMENTS

Supplement #1

Case #1
a. Chest pain S
b. Talkative in a very low, gravelly voice O
c. Wringing hands O
d. Wiping her red, irritated eyes and nose O
e. Temperature 101°F, pulse 96, respirations shallow and rapid O
f. Hoarseness S and O

Case #2
a. Low abdominal pain S
b. 5′–2″ and 325 pounds O
c. Hot and uncomfortable in the bed S
d. Face is flushed and skin is hot and dry O
e. Sharp, constant pain S
f. Grimaces each time abdomen is touched or when she rolls from side to back O

Case #3
a. Pain in lower-right jaw S
b. Right side of face is swollen, and one of the lymph glands under the jaw is enlarged O
c. Whole lower-right side of his face has ached constantly for last three days, and the teeth have been very sensitive S

ANSWERS TO SUPPLEMENTS

Supplement #2

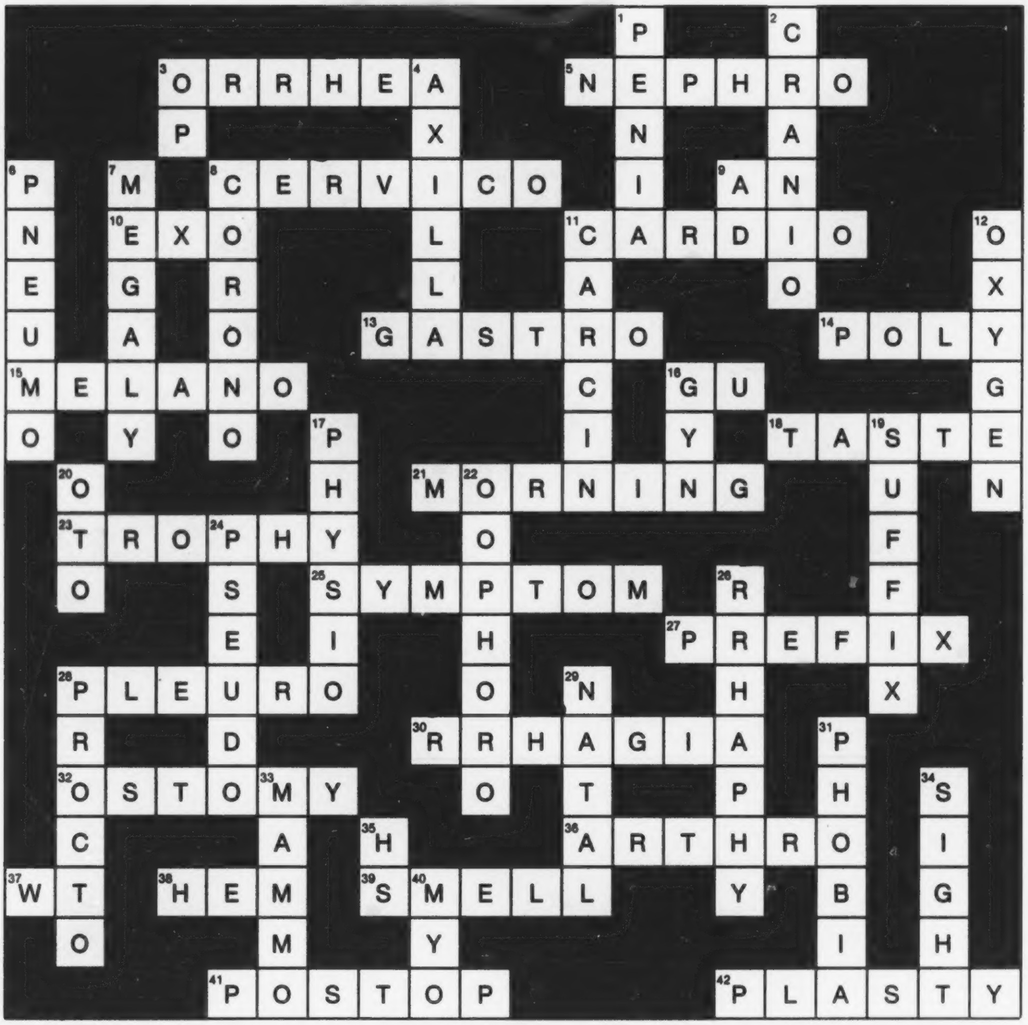
PUZZLE #1

	1 O	L	I	G	O		2 G		3 C			
4 P	T					5 M	U	6 S	C	7 L	E	
	8 O	R	R	9 H	E	A		O		I		
				E		L		U		10 T	A	11 B
	12 S	13 P	L	E	N		14 O	R	T	H		E
15 M	Y	O		D		16 O	B			17 O	U	T
	M		18 H		19 O		J		20 S			W
21 B	P		22 S	U	B	J	E	23 C	T	I	V	E
24 I	T				S		25 C	V	A			E
26 D	O	C	27 U	M	E	N	T	A	T	I	28 O	N
	M		S		R		I				P	
29 I				30 I	V		31 V	I	A			32 A
33 N	E	34 W			A		E			35 R	E	X
T		36 H	I	37 S	T	O		38 H	39 O	E		I
R		I		40 I	I		41 V	E	S	S	E	L
42 A	R	T	H	R	O			M		P		L
		E			43 N	A	T	A	L		44 A	A

ANSWERS TO SUPPLEMENTS

Supplement #2

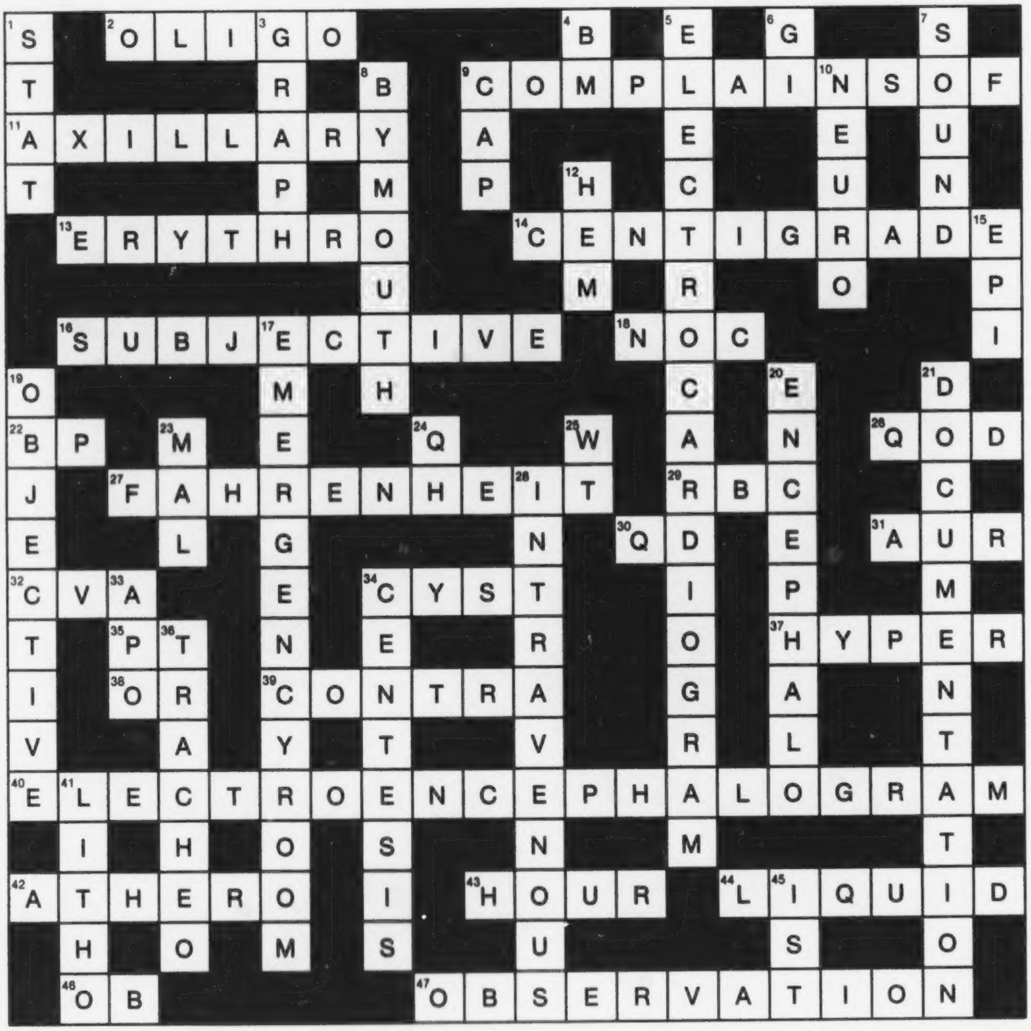
PUZZLE #2



ANSWERS TO SUPPLEMENTS

Supplement #2

PUZZLE #3



1 S		2 O	L	I	3 G	O					4 B		5 E		6 G			7 S	
T					R		8 B		9 C	O	M	P	L	A	I	10 N	S	O	F
11 A	X	I	L	L	A	R	Y		A				E			E		U	
T					P		M		P		12 H		C			U		N	
	13 E	R	Y	T	H	R	O			14 C	E	N	T	I	G	R	A	D	15 E
							U				M		R			O			P
	16 S	U	B	J	17 E	C	T	I	V	E		18 N	O	C					I
19 O					M		H						C		20 E			21 D	
22 B	P		23 M		E			24 Q			25 W		A		N		26 Q	O	D
J		27 F	A	H	R	E	N	H	E	28 I	T		29 R	B	C			C	
E			L		G					N		30 Q	D		E		31 A	U	R
32 C	V	33 A			E		34 C	Y	S	T			I		P			M	
T		35 P	36 T		N		E			R			O		37 H	Y	P	E	R
I		38 O	R		39 C	O	N	T	R	A			G		A			N	
V			A		Y		T			V			R		L			T	
40 E	41 L	E	C	T	R	O	E	N	C	E	P	H	A	L	O	G	R	A	M
	I		H		O		S			N			M					T	
42 A	T	H	E	R	O		I		43 H	O	U	R		44 L	45 I	Q	U	I	D
	H		O		M		S			U					S			O	
	46 O	B						47 O	B	S	E	R	V	A	T	I	O	N	

ANSWERS TO SUPPLEMENTS

Supplement #3

Case #1
a. appendix (vermiform appendix), -itis (inflammation)
b. leuko- (white), cyto- (cell), -osis (condition of)
c. a- (without, lack of), -trophy (nourishment, development)
d. an- (without, lack of), -uria (urine, urination)

Case #2
a. hepato- (liver), -megaly (enlargement)
b. spleno- (spleen), -megaly (enlargement)
c. splen- (spleen), -ectomy (removal of)
d. cyan- (blue), -osis (condition of)

Case #3
a. hemato- (blood), -oma (tumor)
b. rhino- (nose), -plasty (plastic or surgical repair)
c. adeno- (gland), carcin- (cancer), -oma (tumor)

Case #4
arthro- (joint), -scopy (visual examination)

Case #5
amnio- (sac), -centesis (puncture of a cavity)

Case #6
tracheo- (pertaining to the trachea), -ostomy (creation of an artificial opening)

Case #7
angio- (vessel), -gram (drawing)

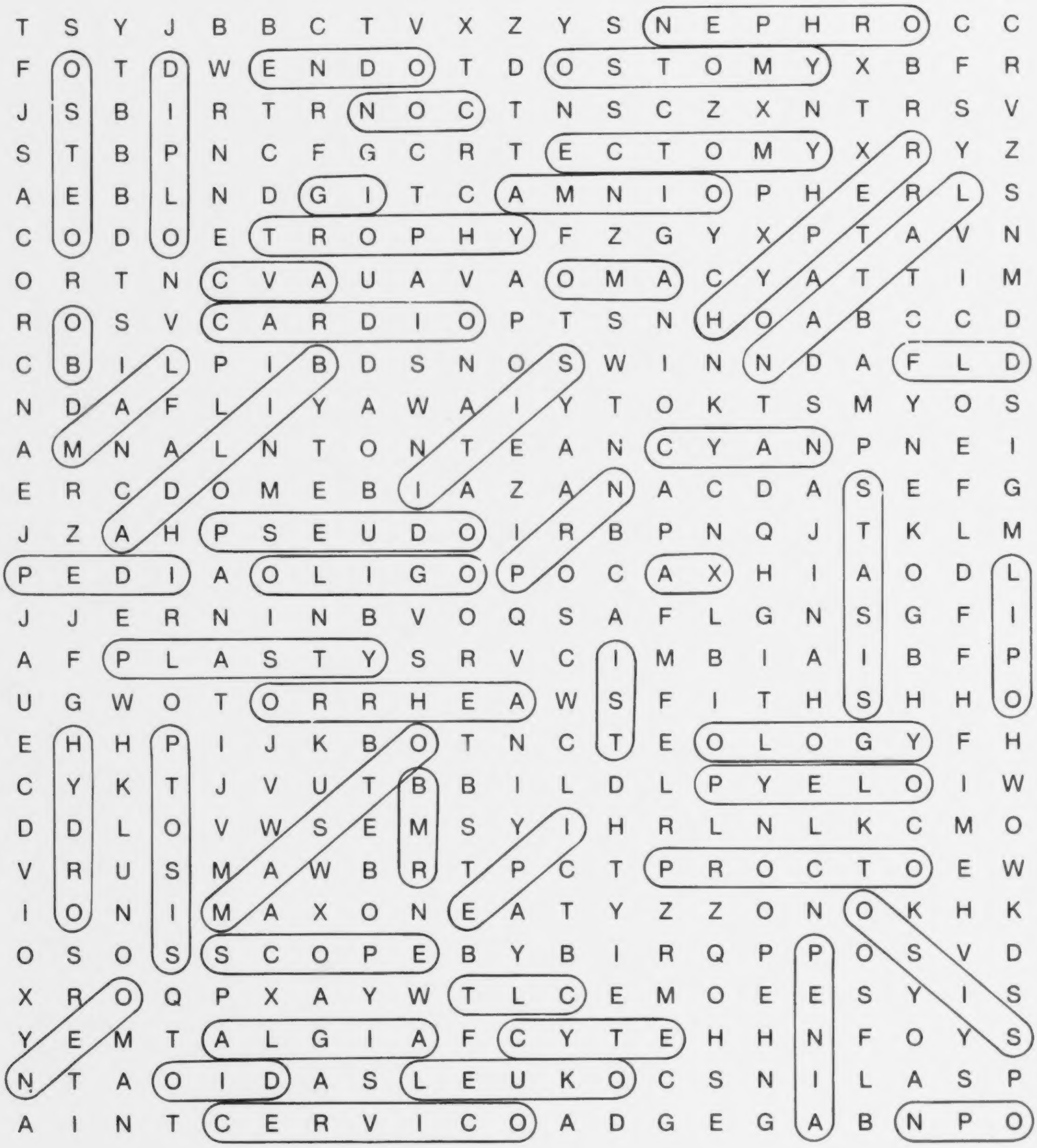
Case #8
gingiva (gum of the mouth), -itis (inflammation)

Case #9
cardio- (heart), -megaly (enlargement)

Case #10
osteo- (bone), arthro- (joint), -itis (inflammation)

ANSWERS TO SUPPLEMENTS

Supplement #5



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F	O	T	D	W	E	N	D	O	T	D	O	S	T	O	M	Y	X	B	F	R
J	S	B	I	R	T	R	N	O	C	T	N	S	C	Z	X	N	T	R	S	V
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P	E	D	I	A	O	L	I	G	O	P	O	C	A	X	H	I	A	O	D	L
J	J	E	R	N	I	N	B	V	O	Q	S	A	F	L	G	N	S	G	F	I
A	F	P	L	A	S	T	Y	S	R	V	C	I	M	B	I	A	I	B	F	P
U	G	W	O	T	O	R	R	H	E	A	W	S	F	I	T	H	S	H	H	O
E	H	H	P	I	J	K	B	O	T	N	C	T	E	O	L	O	G	Y	F	H
C	Y	K	T	J	V	U	T	B	B	I	L	D	L	P	Y	E	L	O	I	W
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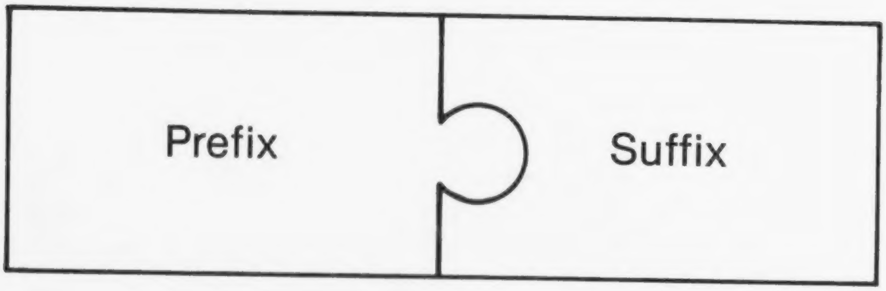
N	T	A	O	I	D	A	S	L	E	U	K	O	C	S	N	I	L	A	S	P
A	I	N	T	C	E	R	V	I	C	O	A	D	G	E	G	A	B	N	P	O

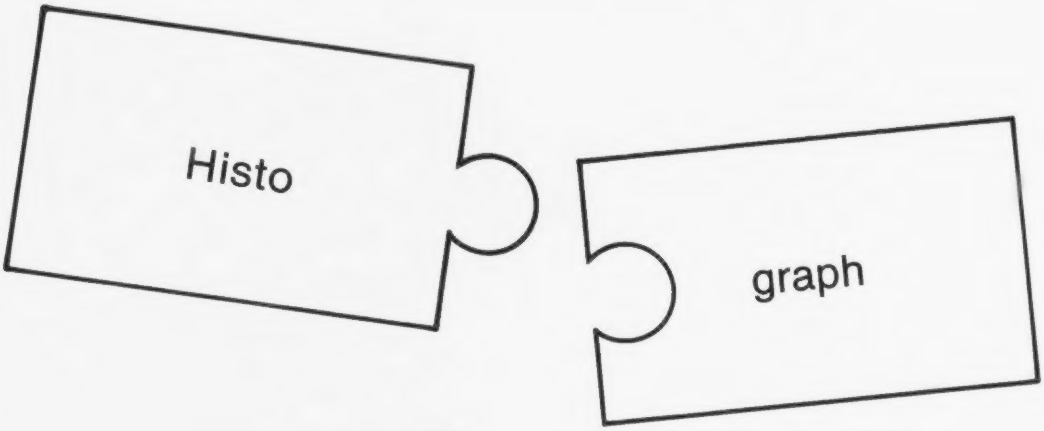
ANSWERS TO SUPPLEMENTS

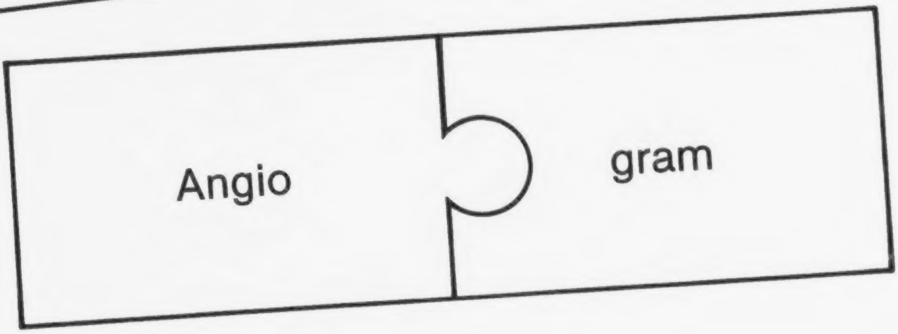
Supplement #6

1. a
2. b
3. a
4. c
5. c
6. b
7. d
8. c
9. b
10. a
11. b
12. c
13. c
14. b
15. c
16. a
17. a
18. c
19. b
20. c
21. c
22. c
23. b
24. d
25. a
26. c
27. a
28. b
29. a
30. a
31. d
32. b
33. b
34. d
35. b
36. c
37. c
38. b
39. b
40. d
41. d
42. c
43. d
44. b
45. c
46. d
47. a
48. a
49. a
50. b
51. d
52. a
53. c

Word Parts







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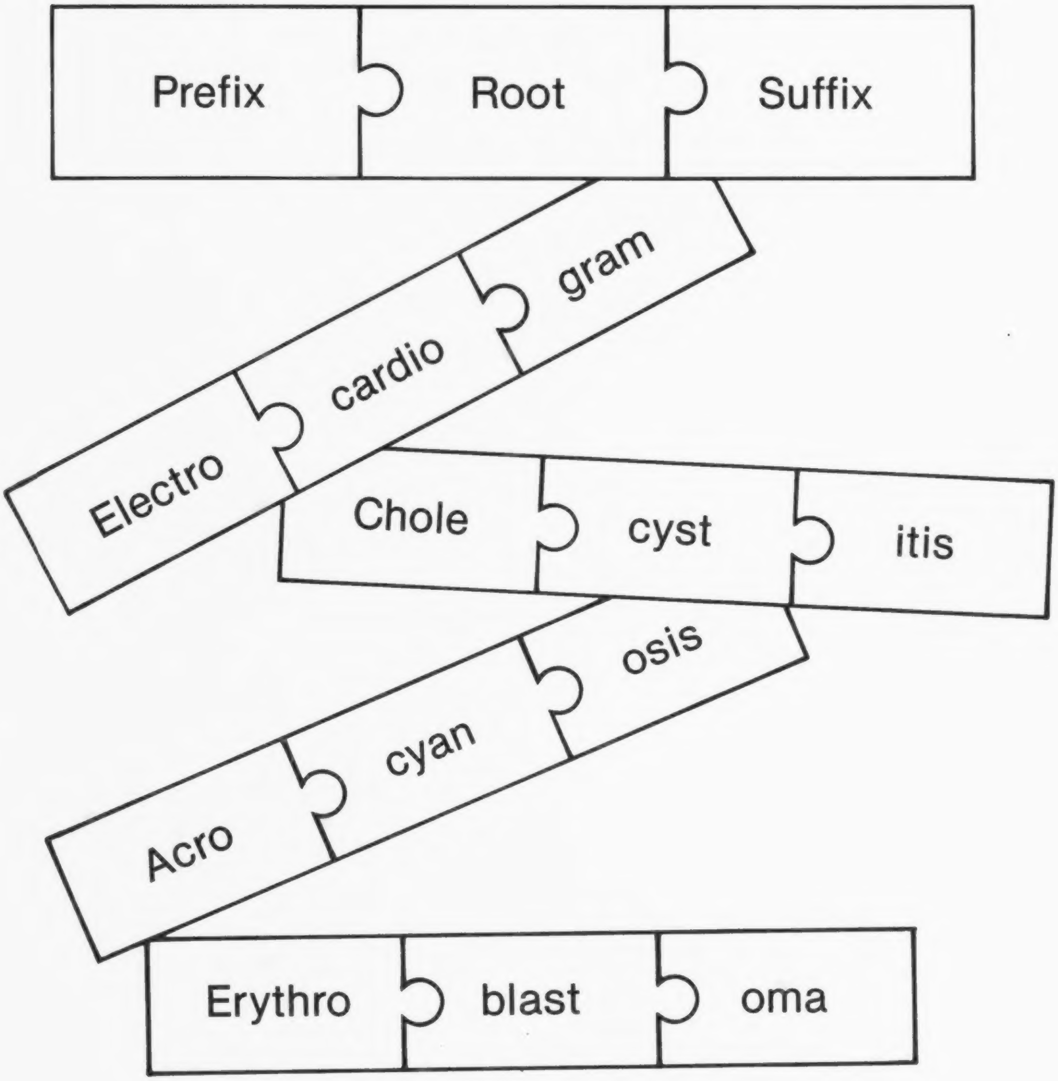


OBSERVATION AND DOCUMENTATION
UNIT II

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

	Word Parts	Meaning	Definition
A.	Histo- -ology	Tissue Study of	Study of tissue
B.	Leuko- -emia	White Condition	Condition of white blood cells
C.	Dermato- -ology -ist	Skin Study of Specialist	Specialist who deals with conditions of the skin
D.	Hepato- -itis	Liver Inflammation	Inflammation of the liver
E.	Tracheo- -otomy	Trachea Incision into	Incision into the trachea
F.	Colo- -ostomy	Large intestine A new opening	A new opening into the large intestine
G.	Intra- -dermal	Within Skin	Within the skin
H.	Mammo- -plasty	Breast Shape or repair	Shaping or repairing of breast
I.	An- -uria	Without, lack of Urine	Lack of urine
J.	Neuro- -ology	Nerve Study of	Study of the nerves
K.	Hypo- -dermic	Under Skin	Under the skin
L.	Lipo- -oma	Fat Tumor	Tumor composed of fat
M.	Hemo- -stasis	Blood Stop or control	Stop or control blood

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #2

	Word Parts	Definition
A.	Myelos/itis	Marrow inflammation
B.	Olig/uresis	Small amount or infrequent urination
C.	Fibra/oma/osis	Fiber tumor condition
D.	Gaster/ektome	Excision of belly
E.	Hydro/oma	Water tumor
F.	Spermatos/blastos	Seed germ (spermatozoa)
G.	Psyche/katharsis	Mind purging
H.	Cardio/stenosis	Heart narrowing
I.	Cyto/phagein/kytos/osis	Cells eating other cells
J.	Nephro/oma	Kidney tumor
K.	Salpingx/tome	Tube cutting
L.	Osteo/osis	Bone condition
M.	Hydro/cephale	Water head
N.	Laryngo/pharynx/itis	Larynx and pharynx inflammation
O.	Peri/cardia/itis	Around heart inflammation
P.	Chole/cyst/ectomy	Bile bladder excision of (removal of gallbladder)
Q.	Nephro/lithiasis	Kidney calculi (stones)
R.	Supra/lumbar	Above lumbar
S.	Pathos/logos	Disease study
T.	Diplo/opia	Double vision condition
U.	Inter/cellular	Between cells
V.	Pneumo/encephalo/graphy	Air head to write (x-ray exam of head following the introduction of air)
W.	Glycos/uria	Sweet urine
X.	Histos/cytos	Tissue cell

OBSERVATION AND DOCUMENTATION
UNIT III

TEST

NAME ________________________________ SCORE ______________

1. Match to their correct definitions terms associated with observation and documentation. Write the correct numbers in the blanks.

_____a. Act of providing substantial support or factual statements in written form

_____b. Beginning of a word, base, or phrase

_____c. Ending of a word, base, or phrase

_____d. Act of gathering data and noting facts and happenings; what is seen or noticed

_____e. Symptom that is not apparent or able to be seen by the observer and apparent only to person experiencing the symptom

_____f. Recognizable change in the physical or mental state

_____g. Symptom that is apparent or able to be seen

_____h. Base part of a word

1. Prefix
2. Suffix
3. Documentation
4. Objective symptom
5. Subjective symptom
6. Root
7. Observation
8. Symptom

2. State purposes of documenting patient information.

a. ____

b. ____

c. ____

d. ____

e. ____

3. List the senses used in making observations to be documented.

a. ____

b. ____

c. ____

d. ____

e. ____

TEST

4. Select from the following list general guidelines for reporting and documenting observations. Place an "X" in the blank beside each correct answer.

______a. Give the duration of the symptom or activity

______b. Speak clearly, using correct health-related terminology when communicating with other health care workers

______c. Diagnose patient's symptoms and report to supervisor

______d. Describe any changes in client's appearance

______e. Write or print clearly all information to be documented

______f. State the client's complaint exactly as your co-worker tells you

______g. Describe amount, color, and character of urine, feces, discharge, sputum, or drainage

______h. Write your own description of how you think the patient feels

______i. Describe the effect of any treatment

______j. Document procedures before they are carried out

______k. Use patient's exact words when possible

______l. Use facility guidelines when documenting information

______m. Give exact time, date, and year that observation took place

______n. State accurate location of observation

______o. Estimate the time in which observation took place

______p. State the frequency and intensity of symptoms or activities

5. Select from the following list written resources that provide information for effective care of the client. Write an "X" in the blank before each correct answer.

______a. Legal documents

______b. Computer data bank

______c. Kardex

______d. Client's will

______e. Care plan

______f. Client's chart or record

______g. Résumé of the client

______h. Policy and procedure manual

TEST

6. Select from the following list guidelines for communicating in writing. Write an "X" in the blank before each correct answer.

_____a. Use local jargon when applicable

_____b. Spell correctly

_____c. Use a method for correcting errors that you are comfortable with

_____d. Write legibly

_____e. Use correct medical terminology

7. Distinguish between good and poor qualities of written documentation. Write a "G" in the blanks before qualities of good charting and a "P" in the blanks before qualities of poor charting.

_____a. Is not signed or dated

_____b. Is easily understood

_____c. Contains essential facts

_____d. Contains professional jargon or slang

_____e. Is critical of client's treatment by other professionals

_____f. Is clear, concise

_____g. Contains unnecessary words

_____h. Is signed with name, title of person writing it, and date

_____i. Clearly indicates when stating a personal opinion

_____j. Indicates bias against client and/or client's family

TEST

8. Match to their correct definitions common prefixes used in health-related terminology. Write the correct letters in the blanks. Blanks may contain more than one answer.

a. ______ 1) Spleen

______ 2) Brain

______ 3) Lungs, air

______ 4) Eye

______ 5) Rectum

______ 6) Heart

______ 7) Ear

______ 8) Stomach

______ 9) Liver

______10) Colon

______11) Kidney

______12) Membranes of lungs

a. Aur-, auri-

b. Cardio-

c. Cebr-, cerebro-

d. Colo-

e. Corono-

f. Encephalo-

g. Gastro-

h. Hepato-

i. Nephro-

j. Op-, ophth-, optic-

k. Oto-

l. Pleuro-

m. Pneumo-

n. Procto-

o. Recto-

p. Splen-, spleno-

TEST

b. ______ 1) Testicle

______ 2) Head

______ 3) Trachea

______ 4) Breast

______ 5) Nose

______ 6) Pelvis

______ 7) Armpit

______ 8) Neck

______ 9) Ovary

______10) Cranium (skull)

______11) Skin

______12) Bone

______13) Muscle

a. Axilla-

b. Cap-

c. Cervico-

d. Cranio-

e. Derm-, dermat-, dermato-

f. Masto-, mammo-

g. Myo-

h. Oophoro-

i. Orchi-

j. Osteo-

k. Pyelo-

l. Rhino-

m. Tracheo-

c. ______ 1) Vein

______ 2) Blood

______ 3) Vessel

______ 4) Nerve

______ 5) Tissue

______ 6) Gland

______ 7) Water

______ 8) Chamber

______ 9) Sac

______10) Joint

a. Adeno-

b. Amnio-

c. Angi-, angio-

d. Antr-

e. Arthro-

f. Cyst-, cysti-, cysto-

g. Hem-, hema-, hemato-, hemo-

h. Histo-

i. Hydro-

j. Neuro-

k. Phleb-, phlebo-

TEST

d. ______ 1) Scanty, few
______ 2) Many, too much
______ 3) Two, double
______ 4) Red
______ 5) Abnormal
______ 6) Straight
______ 7) Black
______ 8) Blue
______ 9) False
______10) White
______11) New
______12) Painful
______13) Slow
______14) Detached

a. Apo-
b. Bi-
c. Brady-
d. Cyan-
e. Diplo-
f. Dys-
g. Erythro-
h. Leuko-
i. Mal-
j. Melano-
k. Neo-
l. Oligo-
m. Orth-
n. Poly-
o. Pseudo-

e. ______ 1) Self
______ 2) Child
______ 3) Stone, calculus
______ 4) Mind
______ 5) Nature
______ 6) Cancer
______ 7) Life
______ 8) Bile, gall
______ 9) Cell
______10) Developing cell
______11) Fat
______12) Yellowish fatty plaque

a. Athero-
b. Auto-
c. Blast-
d. Bio-
e. Carcin-
f. Chol-, chole-, cholo-
g. Cyto-
h. Lipo-
i. Litho-
j. Pedi-
k. Physio-
l. Psych-

TEST

f. ______ 1) Away from

______ 2) Upon, after

______ 3) Under, below

______ 4) Inside

______ 5) Above, excessive

______ 6) Outside

______ 7) Around, surround

______ 8) Before

______ 9) Against

______10) Between

______11) Without, lack of

______12) Toward

a. A-, an-

b. Ab-

c. Ad-

d. Ante-

e. Anti-

f. Contra-

g. Endo-

h. Epi-

i. Exo-

j. Hyper-

k. Hypo-

l. Inter-

m. Intra-

n. Peri-

TEST

9. Match to their correct definitions common suffixes used in health-related terminology. Write the correct suffixs in the blanks.

a. ____________ Creation of an artificial opening
b. ____________ Control, stop
c. ____________ Urine, urination
d. ____________ Inflammation
e. ____________ Cell
f. ____________ Drooping or sagging
g. ____________ Resembling
h. ____________ Condition of
i. ____________ Study of
j. ____________ Fear
k. ____________ Instrument used for visual examination
l. ____________ Puncture of a cavity
m. ____________ Removal of
n. ____________ Specialist
o. ____________ Cutting into or incision
p. ____________ Tumor
q. ____________ Suture or sew
r. ____________ Birth
s. ____________ Flow, excessive discharge
t. ____________ Decrease
u. ____________ Plastic or surgical repair
v. ____________ Abnormal discharge
w. ____________ Nourishment, development
x. ____________ Pain
y. ____________ Enlargement
z. ____________ Instrument used to record
aa. ____________ Blood condition
bb. ____________ Record, x-ray film
cc. ____________ Visual observation

-algia
-centesis
-ectomy
-cyte
-emia
-gram
-graph
-itis
-ist
-megaly
-natal
-oid
-ology
-orrhea
-oma
-osis
-ostomy
-otomy
-penia
-phobia
-plasty
-ptosis
-rrhagia
-rrhaphy
-scope
-scopy
-stasis
-trophy
-uria

TEST

10. Write the meanings of common health-related abbreviations, numbers, and symbols used in documentation of information. Write the correct answers in the blanks.

a. āā ____________________

b. abd ____________________

c. ac ____________________

d. ad lib ____________________

e. a.m. ____________________

f. amb ____________________

g. amt ____________________

h. approx ____________________

i. ax ____________________

j. bid ____________________

k. BMR ____________________

l. BM ____________________

m. BP ____________________

n. BRP ____________________

o. C ____________________

p. c̄ ____________________

q. po ____________________

r. Ped, Peds, or Pedi ____________________

s. P ____________________

t. CA or ca ____________________

u. cc (c.c.) ____________________

v. tid ____________________

w. TLC ____________________

x. TPR ____________________

y. RUQ ____________________

TEST

z. RLQ ____________________

aa. CVA ____________________

bb. DC ____________________

cc. wt ____________________

dd. s̄ ____________________

ee. qod ____________________

ff. qid ____________________

gg. ER ____________________

hh. via ____________________

ii. exam ____________________

jj. OR ____________________

kk. OB ____________________

ll. O_2 ____________________

mm. surg ____________________

nn. F ____________________

oo. stat ____________________

pp. fld ____________________

qq. GI ____________________

rr. WBC ____________________

ss. c/o ____________________

tt. RBC ____________________

uu. GU ____________________

vv. gyn ____________________

ww. h ____________________

xx. R or resp ____________________

yy. ECG (EKG) ____________________

zz. EEG ____________________

TEST

aaa. H_2O ____________________

bbb. hs ____________________

ccc. post-op ____________________

ddd. per ____________________

eee. et, +, & ____________________

fff. qh ____________________

ggg. noc ____________________

hhh. qd ____________________

iii. I and O ____________________

jjj. IV ____________________

kkk. $\bar{q}$ ____________________

lll. l ____________________

mmm. lab ____________________

nnn. min ____________________

ooo. liq ____________________

ppp. prn ____________________

qqq. LUQ ____________________

rrr. pt ____________________

sss. pre-op ____________________

ttt. NPO ____________________

uuu. PT ____________________

vvv. temp ____________________

www. LLQ ____________________

xxx. $\bar{p}$ ____________________

(NOTE: Test item 11 lists an assignment sheet. It is an important part of the test. If it has not been completed, see your instructor.)

11. Use a dictionary to research health-related terminology.

OBSERVATION AND DOCUMENTATION
UNIT II

ANSWERS TO TEST

1. a. 3 e. 5
   b. 1 f. 8
   c. 2 g. 4
   d. 7 h. 6

2. a. To provide information needed to plan client care and to keep care consistent
   b. To provide a legal record that can be used to protect the client, health-care agencies, and health care providers
   c. To provide a way to evaluate, review, and study the client's care
   d. To furnish written evidence of why the client received the care given, what type of response was made, and what changes were made to meet the client's needs
   e. To provide information for research and education

3. a. Sight
   b. Hearing
   c. Smell
   d. Touch
   e. Taste

4. a, b, d, e, g, i, k, l, m, n, p

5. b, c, e, f, h

6. b, d, e

7. a. P f. G
   b. G g. P
   c. G h. G
   d. P i. G
   e. P j. P

8. a. 1) p 7) a, k
   2) c, f 8) g
   3) m 9) h
   4) j 10) d
   5) n, o 11) i
   6) b, e 12) l

ANSWERS TO TEST

b. 1) i
2) b
3) m
4) f
5) l
6) k
7) a
8) c
9) h
10) d
11) e
12) j
13) g

c. 1) k
2) g
3) c
4) j
5) h
6) a
7) i
8) d
9) b, f
10) e

d. 1) l
2) n
3) b, e
4) g
5) i
6) m
7) j
8) d
9) o
10) h
11) k
12) f
13) c
14) a

e. 1) b
2) j
3) i
4) l
5) k
6) e
7) d
8) f
9) g
10) c
11) h
12) a

f. 1) b
2) h
3) k
4) g, m
5) j
6) i
7) n
8) d
9) e, f
10) l
11) a
12) c

9. a. -ostomy
b. -stasis
c. -uria
d. -itis
e. -cyte
f. -ptosis
g. -oid
h. -osis
i. -ology
j. -phobia
k. -scope
l. -centesis
m. -ectomy
n. -ist
o. -otomy
p. -oma
q. -rrhaphy
r. -natal
s. -orrhea
t. -penia
u. -plasty
v. -rrhagia
w. -trophy
x. -algia
y. -megaly
z. -graph
aa. -emia
bb. -gram
cc. -scopy

ANSWERS TO TEST

10. a. of each
b. abdomen
c. before meals
d. as needed
e. morning
f. ambulatory, walking
g. amount
h. approximately
i. axillary
j. twice per day
k. basal metabolic rate
l. bowel movement
m. blood pressure
n. bathroom privileges
o. centigrade
p. with
q. per os; by mouth
r. pediatrics
s. pulse
t. cancer
u. cubic centimeters
v. three times per day
w. tender, loving care
x. temperature, pulse, respiration
y. right upper quadrant of abdomen
z. right lower quadrant of abdomen
aa. cerebrovascular accident
bb. discontinue
cc. weight
dd. without
ee. every other day
ff. four times per day
gg. emergency room
hh. by way of
ii. examination
jj. operating room
kk. obstretics
ll. oxygen
mm. surgical
nn. Fahrenheit
oo. at once
pp. fluid
qq. gastrointestinal
rr. white blood cell
ss. complains of
tt. red blood cell
uu. genitourinary
vv. gynecology
ww. hour
xx. respirations
yy. electrocardiogram, tracing of heart function
zz. electroencephalogram; brain wave tracing
aaa. water
bbb. bedtime; hour of sleep
ccc. post-operative
ddd. by or through
eee. and
fff. every hour
ggg. night
hhh. every day
iii. intake and output
jjj. intravenous
kkk. every
lll. liter
mmm. laboratory
nnn. minute
ooo. liquid
ppp. when necessary
qqq. left upper quadrant
rrr. patient
sss. pre-operative
ttt. nothing by mouth; nothing per os
uuu. physical therapist or therapy
vvv. temperature
www. left lower quadrant; left lower section of abdomen
xxx. after

11. Evaluated to the satisfaction of the instructor

BASIC PHYSICAL AND LIFE SCIENCES
UNIT III

SUGGESTED ACTIVITIES

I. Unit contents

  A. Objective sheet

  B. Suggested activities

  C. Supplement #1 — Crossword Puzzle

  D. Transparency masters

    1. TM #1 — Forms of Energy
    2. TM #2 — pH scale
    3. TM #3 — Basic parts of a cell
    4. TM #4 — Nerve Cell
    5. TM #5 — Epithelial Tissues
    6. TM #6 — Epithelial Tissues (Continued)
    7. TM #7 — Connective Tissues
    8. TM #8 — Voluntary Muscle Tissue
    9. TM #9 — Involuntary Muscle Tissue
    10. TM #10 — Cardiac Muscle Tissue
    11. TM #11 — Body Cavities
    12. TM #12 — Quadrants of the Abdominopelvic Area
    13. TM #13 — Regions of the Abdominopelvic Area
    14. TM #14 — Directions
    15. TM #15 — Directions (Continued)
    16. TM #16 — Planes

  E. Information sheet

  F. Assignment Sheet #1 — Classify the pH of Solutions

  G. Answers to assignment sheet

  H. Test

  I. Answers to test

SUGGESTED ACTIVITIES

II. Instructor's guide

A. Review unit and plan presentation.

B. Order transparencies and competency profiles.

(NOTE: Transparencies and competency profiles for this manual are available from the Curriculum and Instructional Materials Center, Oklahoma State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

C. Introduce unit.

- Explain to the students that in any health-related occupation, a basic understanding of physical and life sciences is needed to help them understand anatomy and physiology and how the body functions.
- Keep explanations simple so as not to intimidate the student.
- Discuss situations in which information in this unit might be used.

EXAMPLES: Preparing mixtures in the pharmacy, diagnosing conditions, explaining the importance of acid/base balance in respiratory therapy

- Explain that this unit will be a building block of information for increased understanding of the human body: the units on anatomy will expand on this material.

D. Provide students with unit.

E. Discuss unit and specific objectives.

F. Discuss information sheets and assignment sheets.

1. Use Information Sheet, Section I, to discuss terms and definitions associated with basic concepts of physical sciences.
    - Discuss how the human body functions by maintaining a delicate balance of many components such as acids and bases and electrolytes.
    - Explain how complex body functions are, but the terms involved are used frequently and in many situations.
    - Point out again that the knowledge of these terms will lead to a better understanding of how the human body functions.
2. Use Information Sheet, Section II, to discuss states of matter.
    - Explain that the three states of matter are used in the composition of the human body.

SUGGESTED ACTIVITIES

- Give other examples of the three states of matter that might be used in the health care field.

  EXAMPLES: Solid-organs
  Liquid-water
  Gas-nitrous oxide

- Discuss that the basic unit of all matter is an atom and that all matter is formed by various combinations of atoms.

3. Use Information Sheet, Section III, to discuss elements.

   - Explain that chemical symbols are frequently used in documentation of client care.
   - Point out that two or more elements make up a compound to reinforce that matter is built up into many complex structures, one building on another.
   - Show students a copy of a lab report to illustrate how chemical symbols are used in lab work.

4. Use Information Sheet, Section IV, to discuss physical and chemical changes.

   - Stress that chemical changes produce a new substance while physical changes do not.
   - Demonstrate or show the examples in the information sheet to illustrate physical and chemical changes.

5. Use Information Sheet, Section V, to discuss forms of energy.

   - Use Transparency #1 to illustrate the different forms of energy.
   - Explain that all activities of the body require energy; that need is met by the consumption of food, which contains energy in its chemical form.
   - Explain that energy is power that may be translated into motion, overcoming resistance, effecting physical change, and the ability to do work.

6. Use Information Sheet, Sections VI and VII, to discuss properties of acids and bases.

   - Explain that the balance of acids and bases in the body is extremely delicate and that an imbalance can cause severe problems.
   - Use Transparency #2 to illustrate the pH of some common solutions.

SUGGESTED ACTIVITIES

- Discuss shampoo advertising that has a pH balance as a selling point.

- Have the students complete Assignment Sheet #1 to classify the pH balance of common solutions.

- Tell the students that the body's fluids are normally somewhat alkaline and a pH above 7.8 or below 6.8 is generally fatal.

7. Use Information Sheet, Section VIII, to discuss why the body needs mineral salts.

   - Have the students evaluate any multivitamin bottle to determine the minerals included.

   - Explain that when electrolytes are dissolved in water, they become electrically charged, either positively or negatively. Compare this to the connections in a battery to show how they are both needed to work.

   - Explain that electrolytes are essential to the normal functioning of all cells.

8. Use Information Sheet, Section IX, to discuss terms and definitions associated with basic concepts of life sciences.

   - Discuss with the students that any occupation within the health field will need a basic understanding of life sciences.

   - Relate life sciences to your students' areas of interest.

     EXAMPLES: Dental services will require knowledge of dental anatomy as well as general anatomy; veterinary occupations can transfer this information to animals; coding assistants will need this knowledge in documentation.

   - Find out what the students already know in this area from other classes and build on this knowledge.

   - Use the video game Pac-Man to illustrate *phagocytosis*, with Pac-Man being the white blood cell.

   - Relate conductivity to electrolytes.

9. Use Information sheet, Sections X and XI, to discuss parts, components and mitosis of a cell.

   - Use Transparency #3 to illustrate basic parts of a cell.

   - Show Transparency #4 to show parts of a nerve cell.

   - Explain that the mitochondria does chemical reactions that supply most of the power for doing cellular work.

SUGGESTED ACTIVITIES

- Point out that the nucleus contains the chromosomes, which contain DNA. DNA is the genetic material that contains all the information of the parent cell for reproduction.
- Identify chromatin as the substance of the chromosomes.
- Explain that cytoplasm is the protoplasm contained within the cell; everything happening within the cell is either in the cytoplasm or in close contact with it.
- Point out that the centrosome plays an important part in mitosis.
- Discuss mitosis, which is cell division. The student may be able to remember the term *mitosis* by using the following phrase for recall: "Mitosis at the bottom of my feet."
- Point out that mitosis is an important process to know because various functions such as growth and repair of tissues depend on this reproduction of cells. Unfortunately, growth of tumors also takes place by mitosis.
- Have a laboratory technician show the students a slide containing cells.

10. Use Information Sheet, Section XII, to discuss functions of different types of tissue.
    - Use Transparencies #5-#10 to illustrate different types of tissues.
    - Stress that the different types of tissues have different functions and are comprised of similar, specialized cells.
    - Show the students the different types of cells under a microscope.
    - Demonstrate the difference between voluntary and involuntary muscles. For example, have the students stand, move certain limbs, and then compare that action to the action of muscle tissue in the heart.
    - Demonstrate dilation and contraction by shining a penlight in a student's eyes and have the other students observe what happens to the pupil.

11. Use Information Sheet, Sections XIII-XV, to discuss cavities, abdominopelvic areas, and directional terms of the body.
    - Use Transparency #11 to illustrate the body cavities.
    - Explain that names of cavities, regions, and directions are used widely in client documentation, and it is essential that the student be familiar with these terms.
    - Use Transparencies #12 and #13 to illustrate the regions of the abdominopelvic area.

SUGGESTED ACTIVITIES

- Point out that *right* and *left* refer to the *client's* right and left sides.
- Give the abbreviations for these areas and name their internal contents.
- Stress that these terms are commonly used and that the diagnosis of a condition is made easier by accurate identification of the area causing trouble.
- Use Transparencies #14-#16 to illustrate the directional terms associated with the human body.
- Use games such as Concentration to help the students become familiar with the directions.
- Use Supplement #1 to reinforce information in unit.

G. Give test.

H. Reteach and retest if necessary.

I. Complete appropriate section of students' competency profiles.

III. Unit references

A. Anthony, Catherine Parker, and Gary A. Thibodeau. *Structure & Function of the Body*, 7th ed. St. Louis, Missouri: Times Mirror/Mosby College Publishing, 1984.

B. Rogers, Helen V. and Ann Benson. *Practical Nursing: Volume I*, rev. by Jamee Reid Sloan. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1981.

BASIC PHYSICAL AND LIFE SCIENCES
UNIT III

SUPPLEMENT #1 — CROSSWORD PUZZLE

Test yourself on terminology associated with basic physical and life sciences. Use the clues below to fill in the crossword puzzle on the next page.

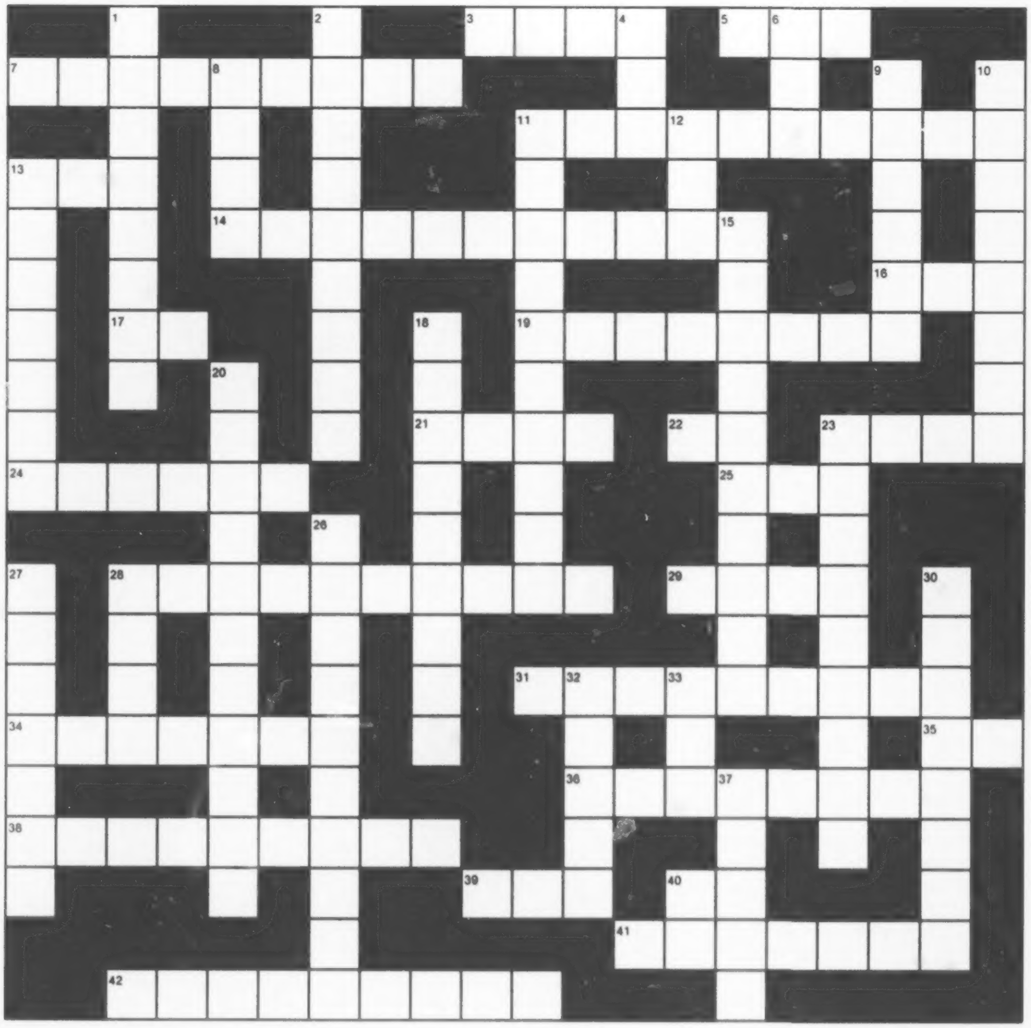
ACROSS

3. Substance that yields hydrogen ions in solution
5. State of matter that has a definite weight but indefinite shape and volume
7. PO_4
11. Study of function
13. To clean the floor
14. Any compound that separates into charged particles called *ions*
16. Be sick
17. Sodium
19. Nearest to the origin of a structure
21. Anon
22. Hydrogen ion concentration of a solution
23. Frolic
24. Organic catalyst produced by living cells
25. Self
28. Living material in all cells
29. Pale green or whitish bean
31. Condition resulting from accumulation of base or from depletion of acid reserve
34. SO_4
35. Chlorine
36. Smallest unit into which a substance may be divided without losing its characteristics
38. Science that deals with the composition of substances and the changes they undergo
39. Atom or group of atoms carrying an electrical charge
40. Iron
41. Cavity that contains thoracic, abdominal, and pelvic cavities
42. Toward the back

DOWN

1. Two or more elements united in a fixed ratio
2. Mg
4. 24 hours
6. Prefix meaning *detached*
8. Wan
9. Cavity that includes cranial and spinal cavities
10. Study of cells
11. (P)
12. Be seated
13. Two or more elements or compounds that are not chemically combined
15. Tissue that protects skin, secretes hormones, absorbs vitamin D, and receives sensations
18. Study of microscopic structure of tissues
20. State of chemical balance between the cell and its environment
23. (K)
26. Tissue that connects tendons, supports bones, lines the skin, and protects bursal sacs
27. Science that deals with matter, energy, and their interactions
28. Rind
30. Pertaining to the internal organs
32. Citrus fruit
33. Every one
37. Happening
40. Iron

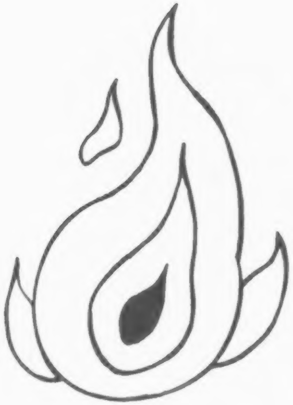
SUPPLEMENT #1

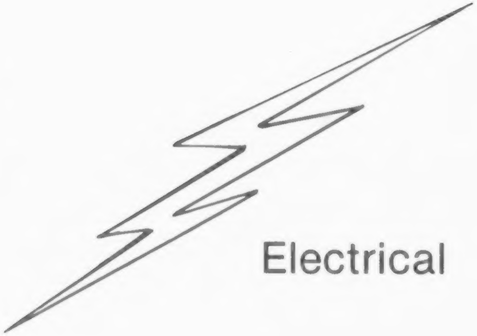


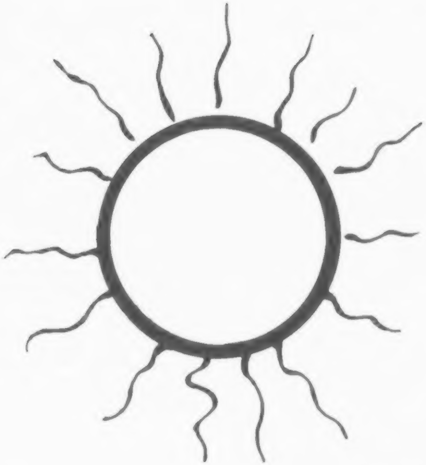
SUPPLEMENT #1

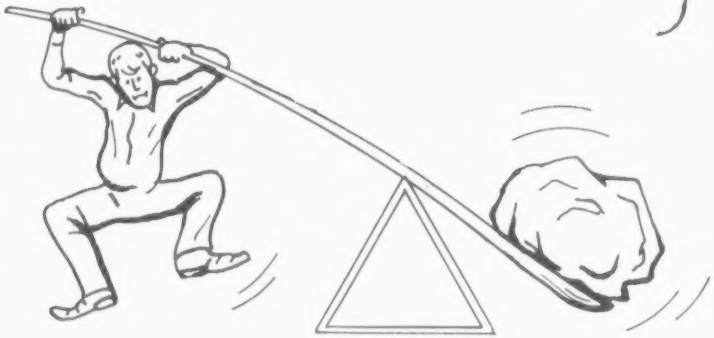
		1 C				2 M			3 A	C	I	4 D		5 G	6 A	S			
7 P	H	O	S	8 P	H	A	T	E				A			P		9 D		10 C
		M		A		G				11 P	H	Y	12 S	I	O	L	O	G	Y
13 M	O	P		L		N				H			I				R		T
I		O		14 E	L	E	C	T	R	O	L	Y	T	15 E			S		O
X		U				S				S				P			16 A	I	L
T		17 N	A			I		18 H		19 P	R	O	X	I	M	A	L		O
U		D		20 H		U		I		H				T					G
R				O		M		21 S	O	O	N		22 P	H		23 P	L	A	Y
24 E	N	Z	Y	M	E			T		R				25 E	G	O			
				E		26 C		O		U				L		T			
27 P		28 P	R	O	T	O	P	L	A	S	M		29 L	I	M	A		30 V	
H		E		S		N		O						A		S		I	
Y		E		T		N		G		31 A	32 L	K	33 A	L	O	S	I	S	
34 S	U	L	F	A	T	E		Y			E		L			I		35 C	L
I				S		C					36 M	O	L	37 E	C	U	L	E	
38 C	H	E	M	I	S	T	R	Y			O			V		M		R	
S				S		I			39 I	O	N		40 F	E				A	
						V						41 V	E	N	T	R	A	L	
		42 P	O	S	T	E	R	I	O	R				T					

Forms of Energy


Heat

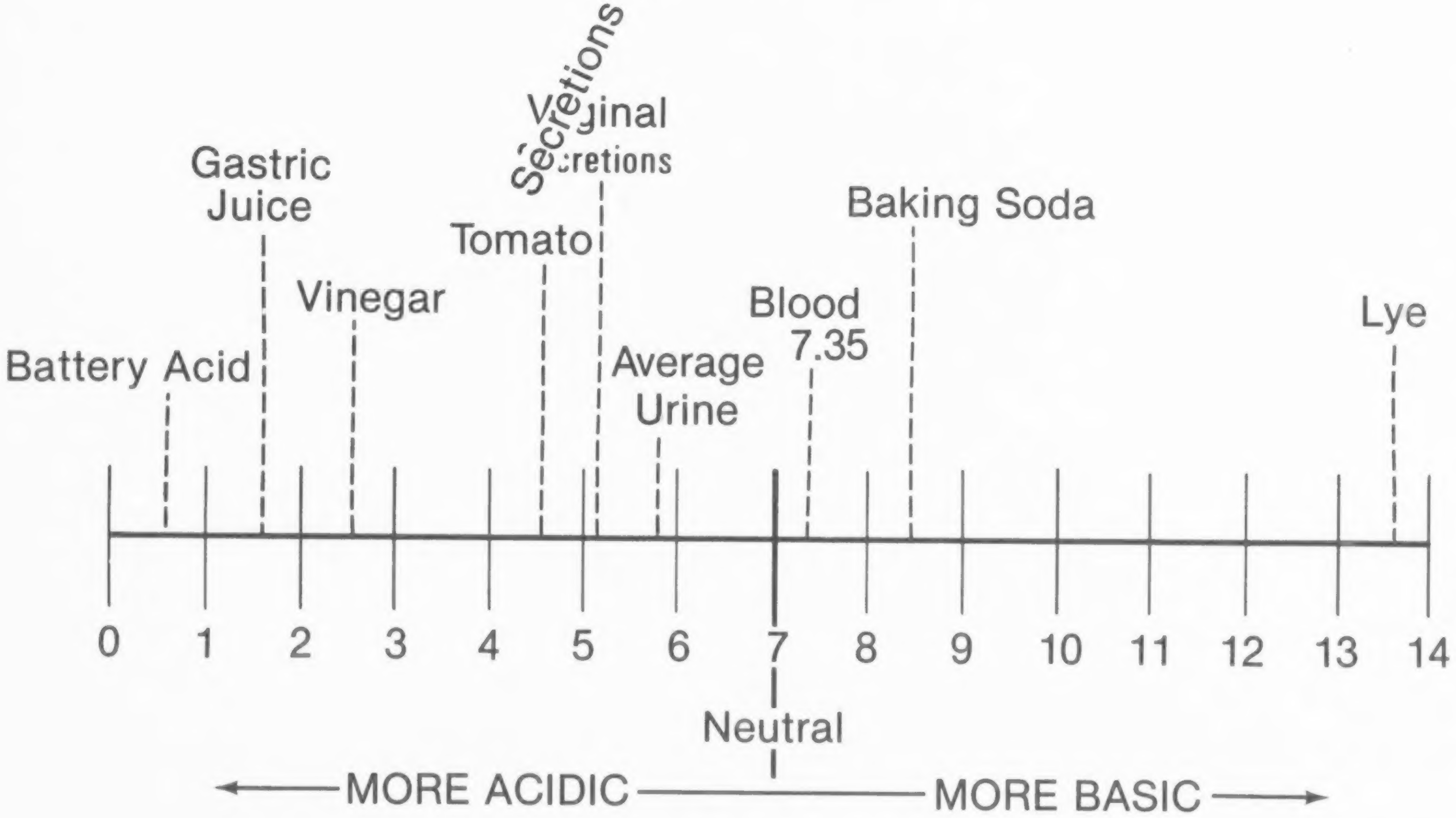

Electrical


Radiant

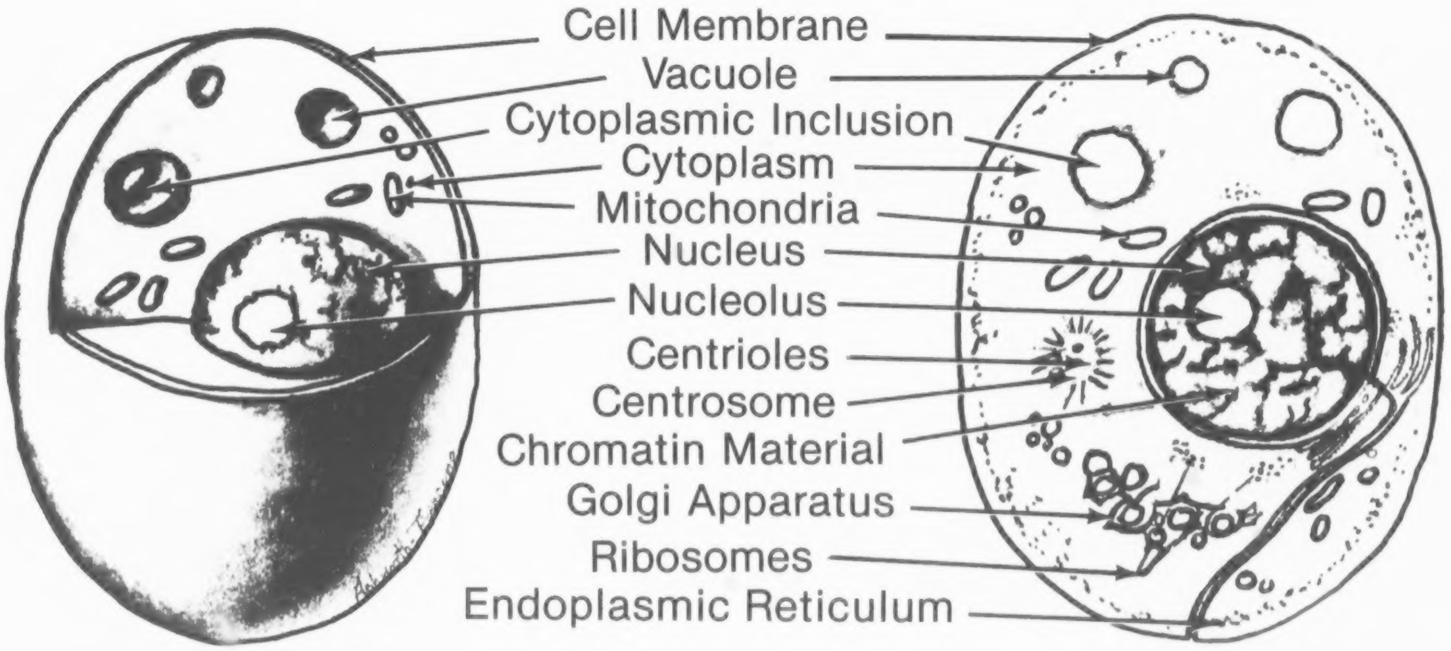

Mechanical

Chemical

pH Scale

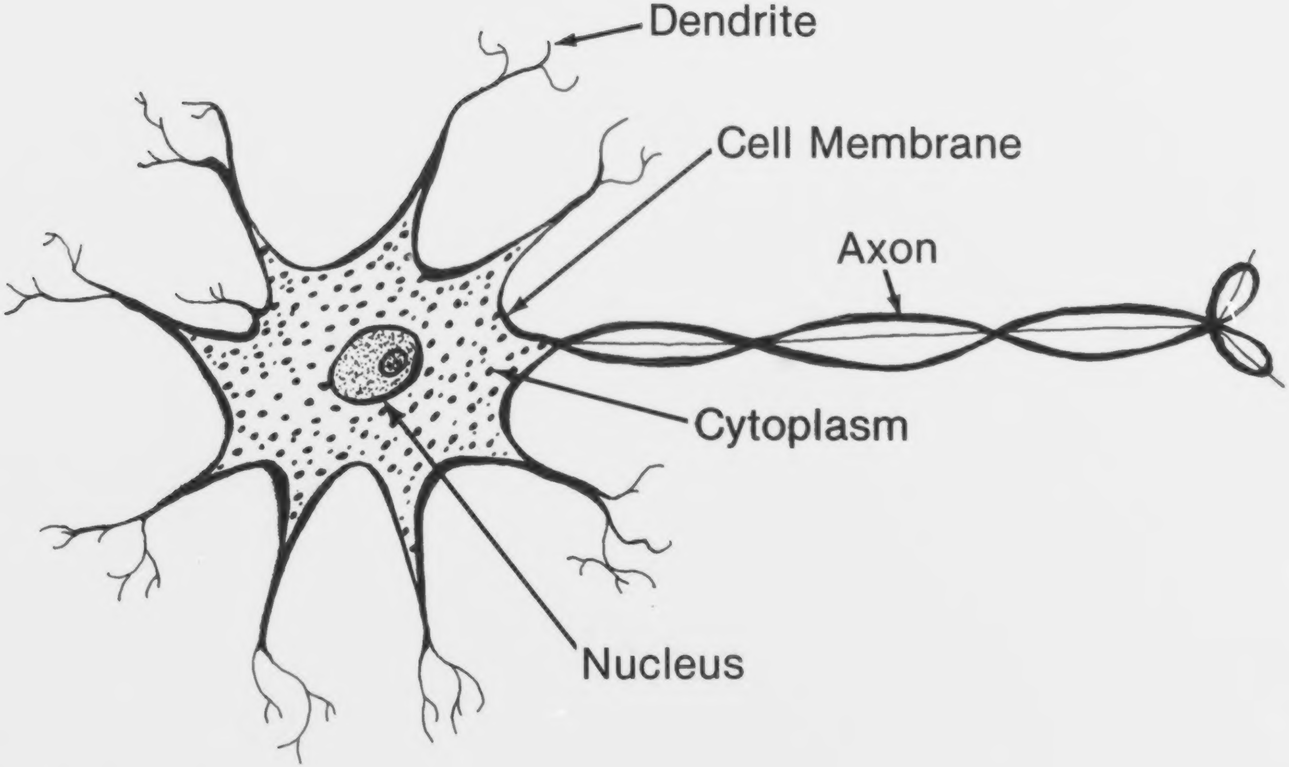

Secretions
Vaginal Secretions
Gastric Juice
Tomato
Baking Soda
Vinegar
Blood 7.35
Lye
Battery Acid
Average Urine
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
Neutral
MORE ACIDIC
MORE BASIC

Basic Parts of a Cell



Used with permission of W.B. Saunders Company from *Structure and Function in Man*, 4th ed., by Stanley W. Jacob, Clarice A. Francone, and Walter J. Lossow, copyright 1978.

Nerve Cell



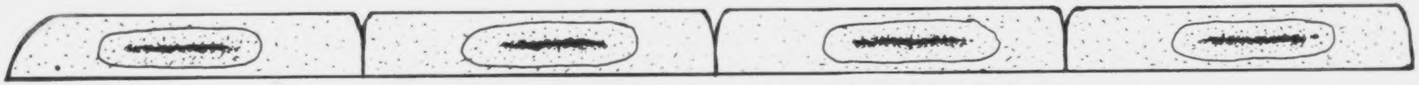
TM #4

478

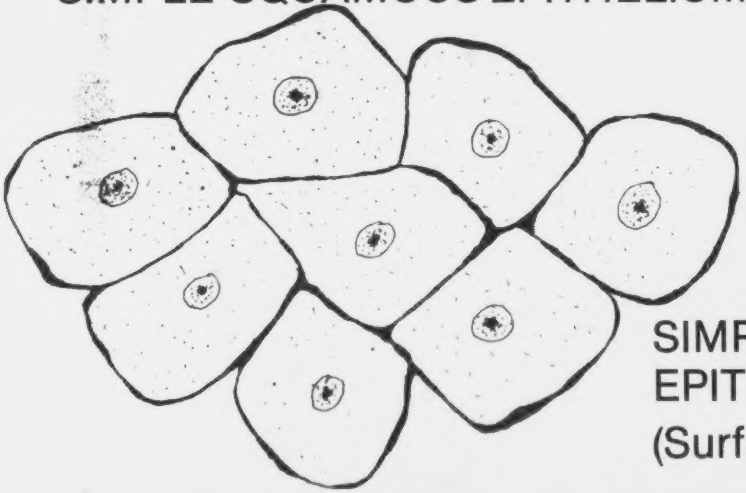
479

AHC - 295-C

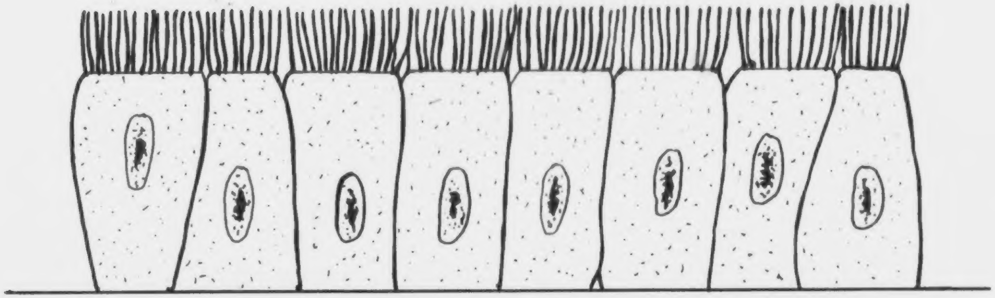
Epithelial Tissues



SIMPLE SQUAMOUS EPITHELIUM



SIMPLE SQUAMOUS
EPITHELIUM
(Surface View)

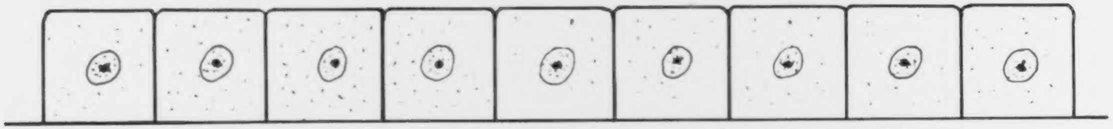


CILIATED COLUMNAR EPITHELIUM

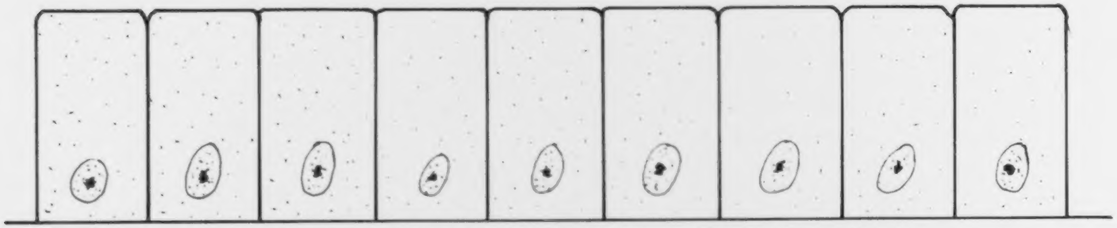
TM #5

AHC - 297-C

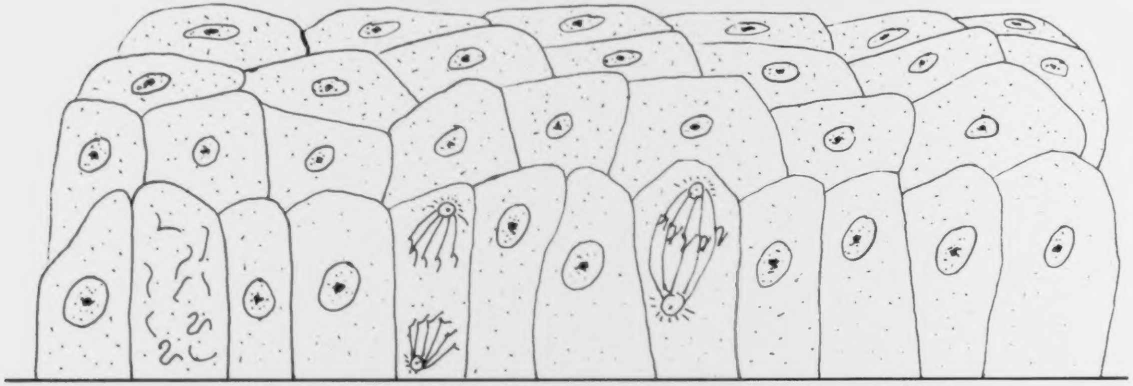
Epithelial Tissues
(Continued)



SIMPLE CUBOIDAL EPITHELIUM

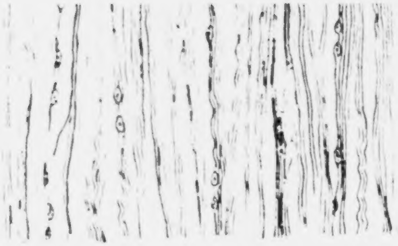


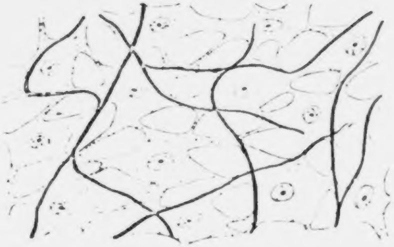
SIMPLE COLUMNAR EPITHELIUM

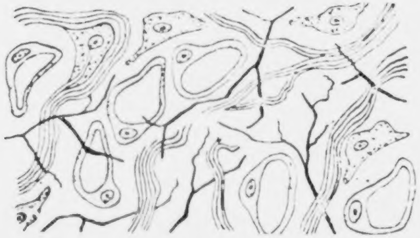


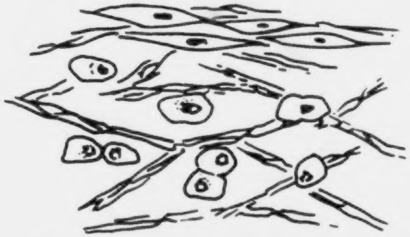
STRATIFIED SQUAMOUS EPITHELIUM

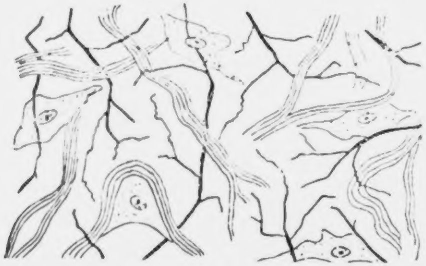
Connective Tissues

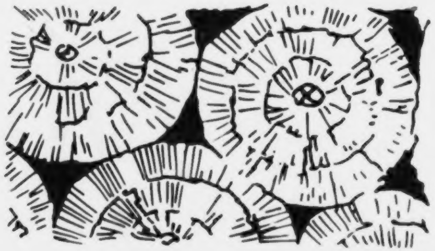

Fibrous Connective Tissue


Reticular Connective Tissue

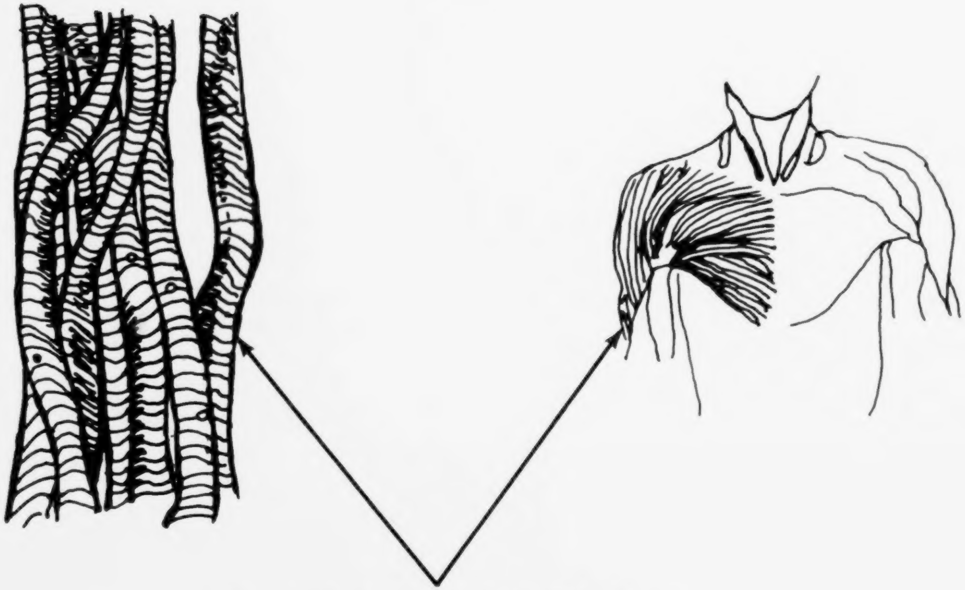

Adipose Connective Tissue


Cartilage (Elastic) Tissue


Areolar Connective Tissue

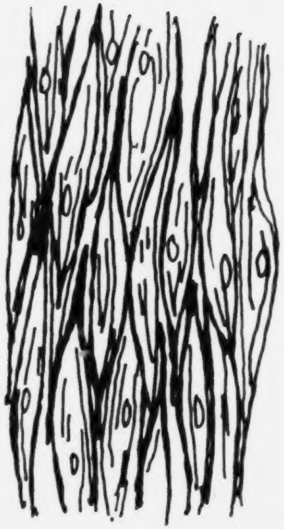

Bone (Osseous) Tissue

Voluntary Muscle Tissue

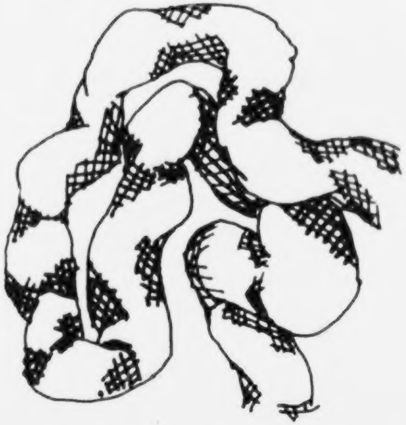


Skeletal Muscle Tissue

Involuntary Muscle Tissue



Visceral Muscle Tissue



Small Intestine

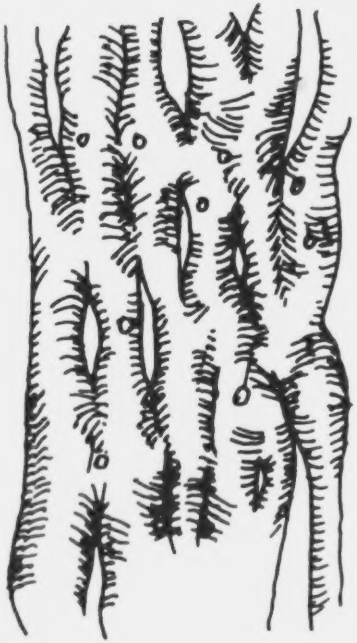
489

TM #9

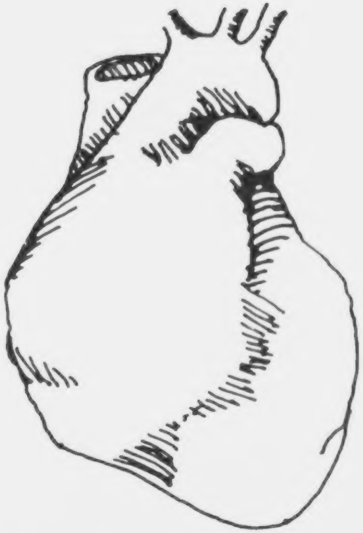
488

AHC - 305-C

Cardiac Muscle Tissue

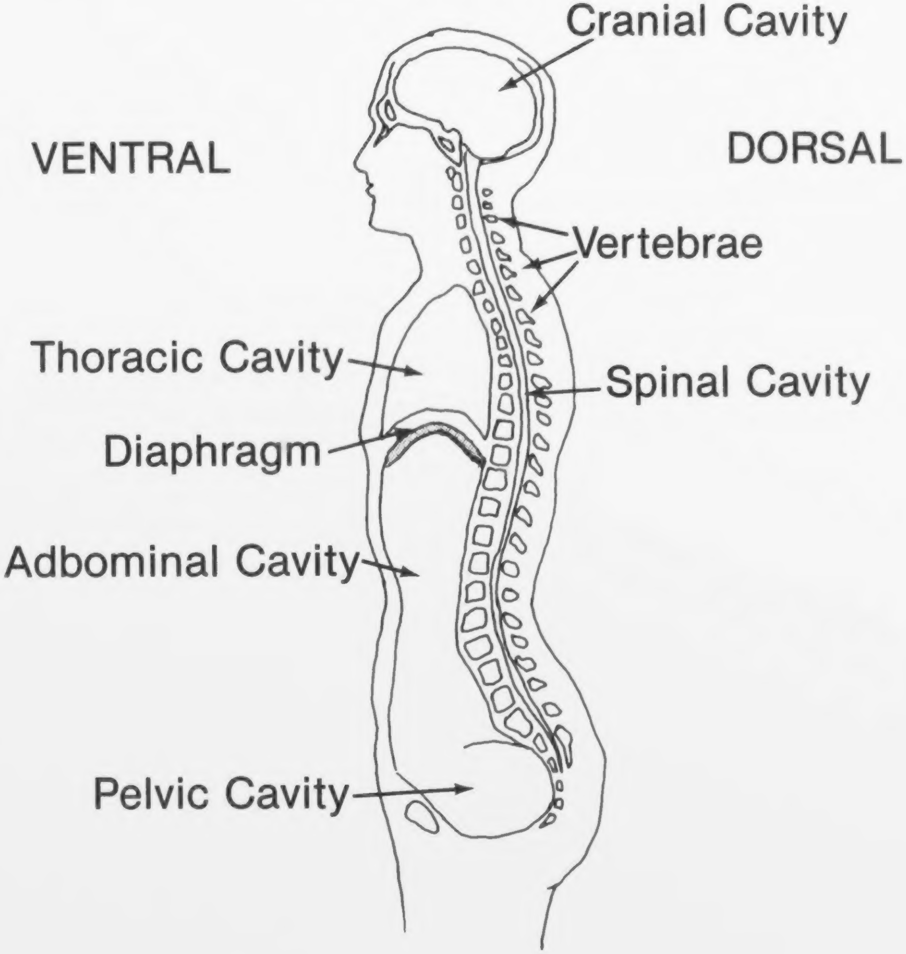


Cardiac Muscle Tissue

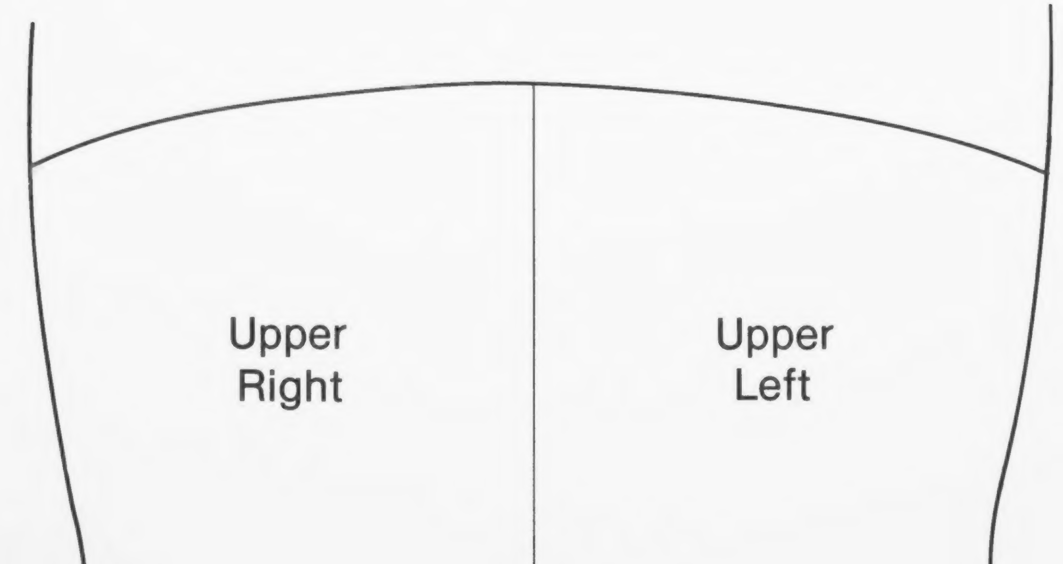


The Heart

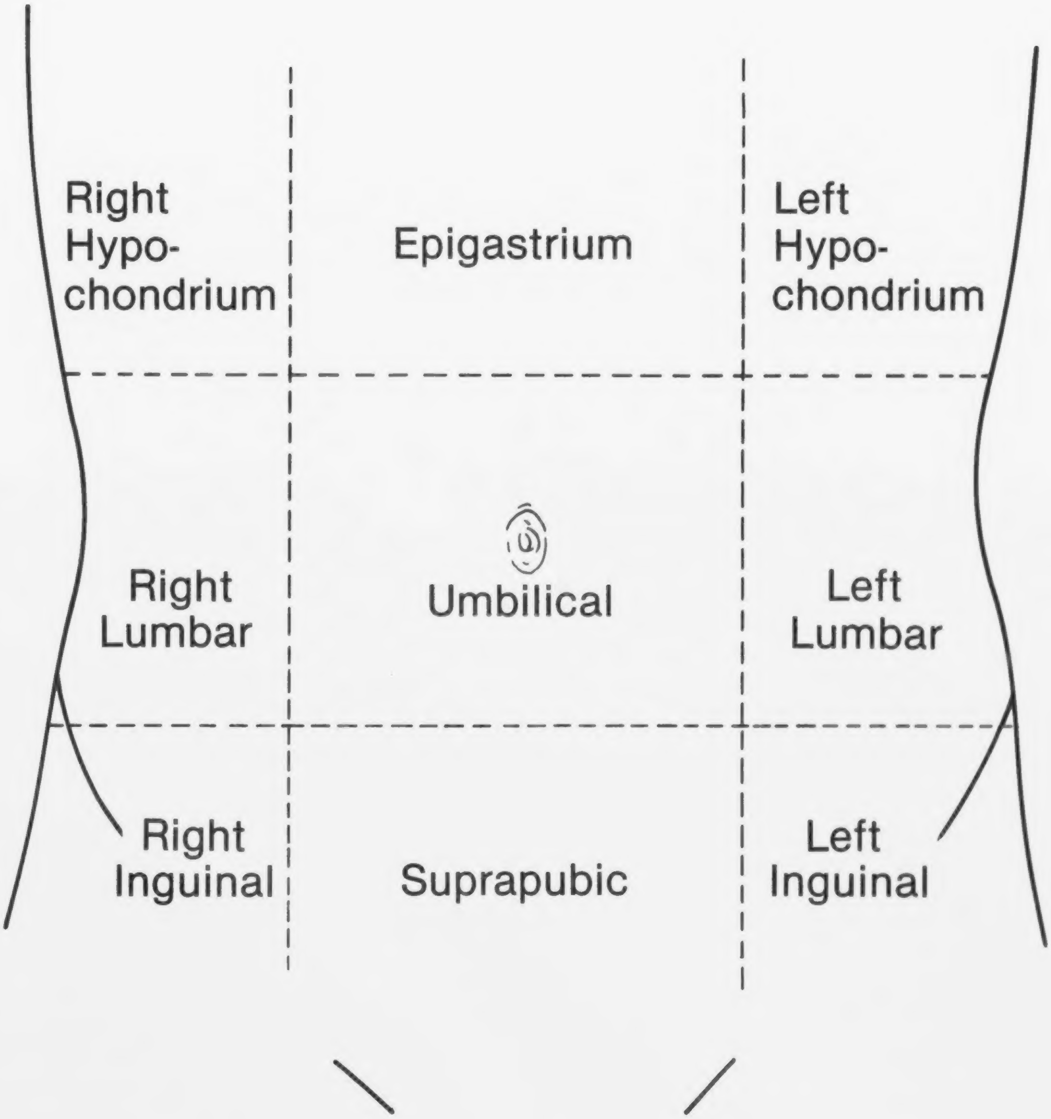
Body Cavities



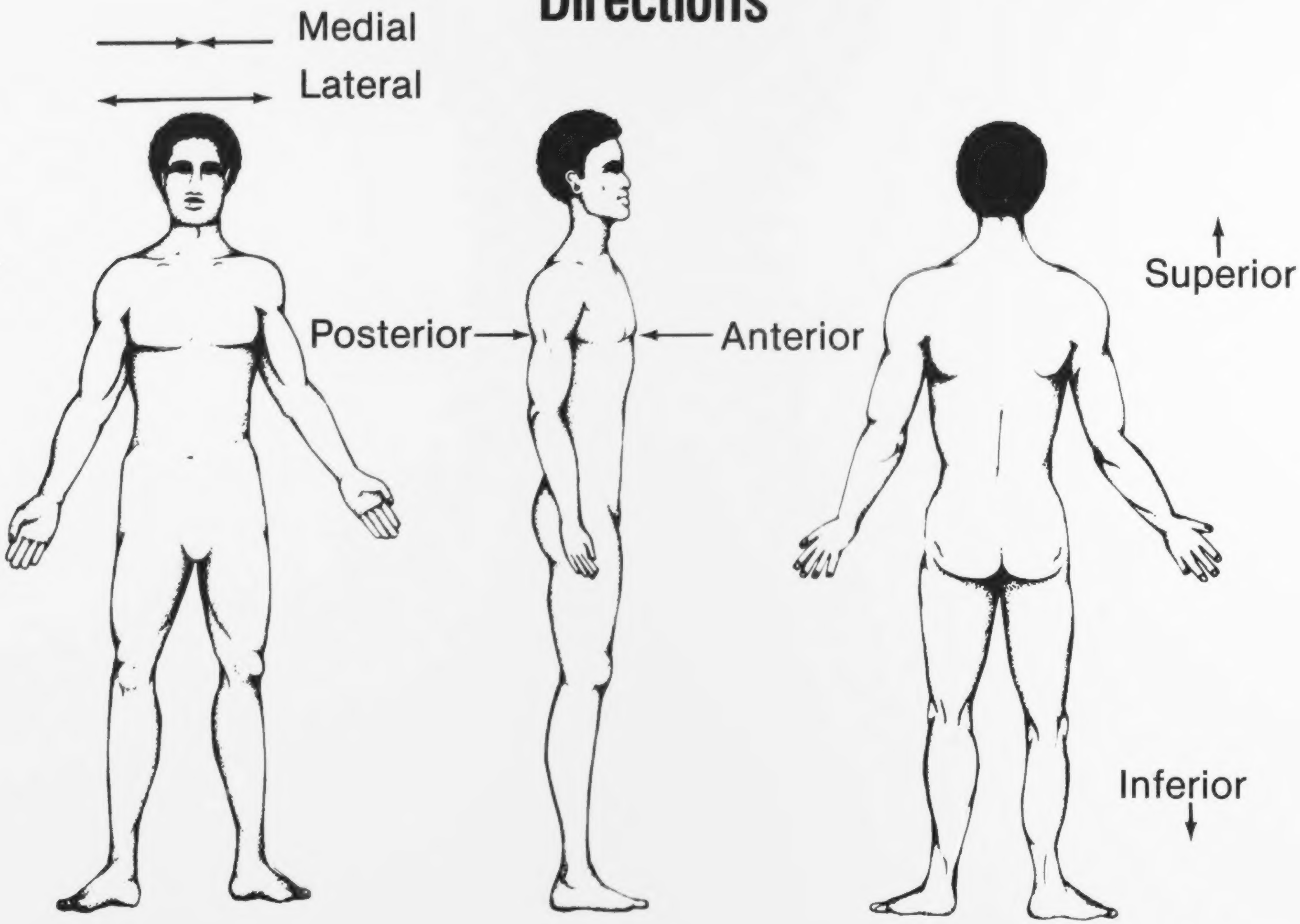
Quadrants of the Abdominopelvic Area



Regions of the Abdominopelvic Area



Directions

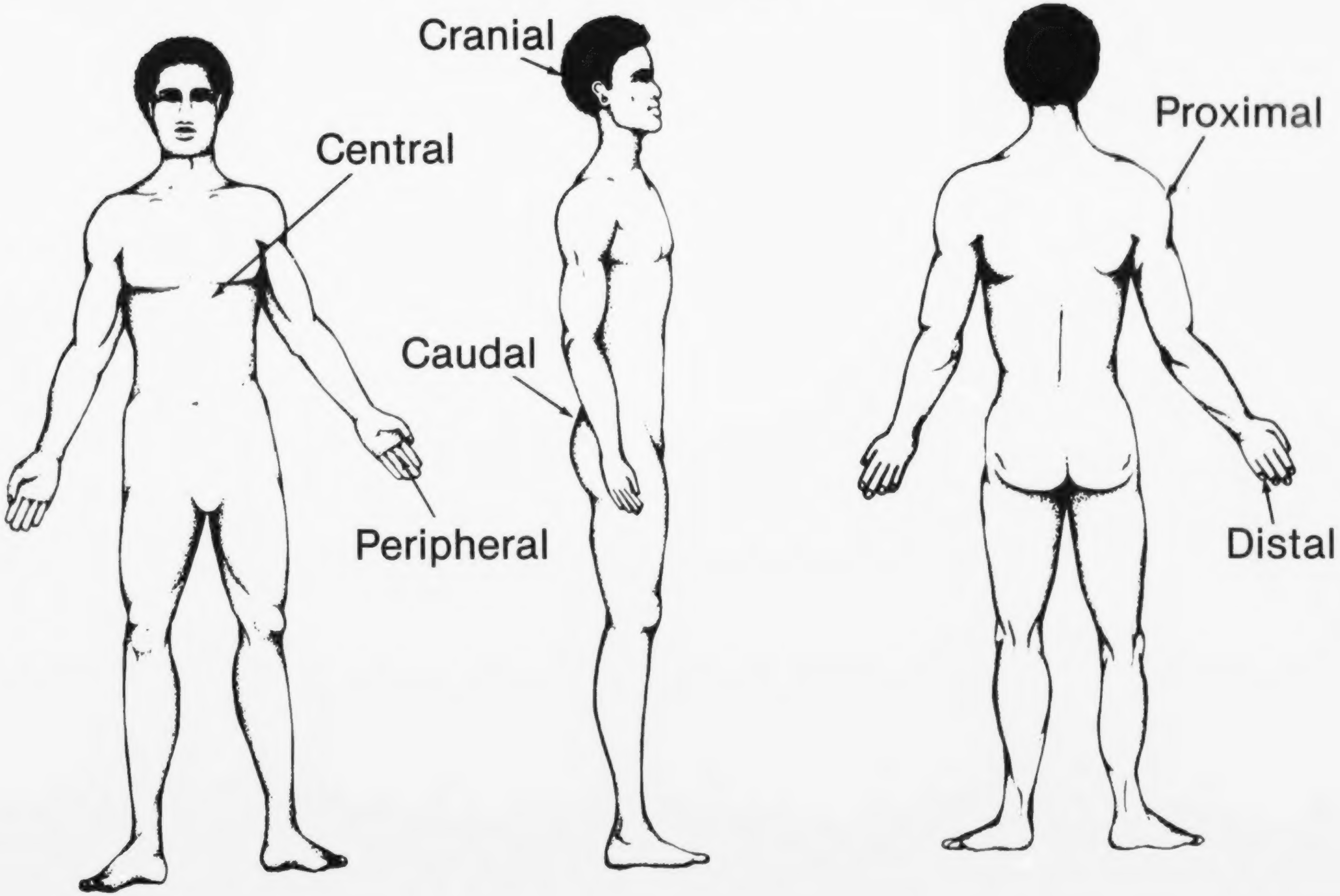


TM #14

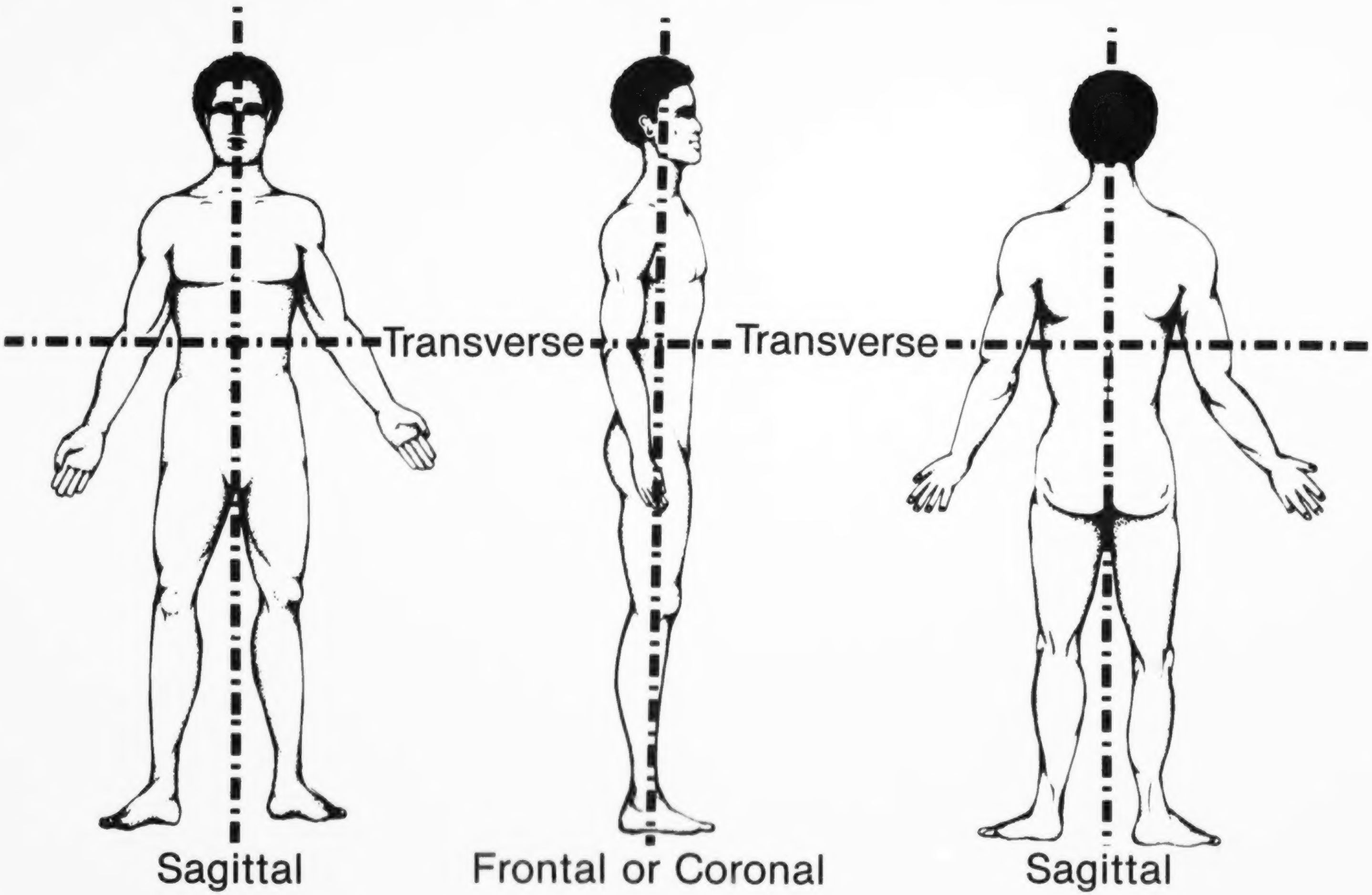
AHC - 315-C

Directions

(Continued)



Planes



TM #16

AHC - 319-C

BASIC PHYSICAL AND LIFE SCIENCES
UNIT III

ANSWERS TO ASSIGNMENT SHEET

Assignment Sheet #1 — Evaluated to the satisfaction of the instructor

BASIC PHYSICAL AND LIFE SCIENCES
UNIT III

TEST

NAME ______________________________ SCORE ____________

1. Match to ther correct definitions terms associated with basic physical sciences. Write the correct numbers in the blanks. Definitions continue on the next page.

______a. Liquid containing dissolved solids called solutes

______b. Compounds formed from the reaction of an acid with a base

______c. Change that affects the composition of matter

______d. Science that deals with the composition of substances and the changes they undergo

______e. Force that produces change or results from change; the ability or power to do work

______f. Atom or group of atoms carrying an electrical charge

______g. Liquid part of blood

______h. Physical material having form and weight; anything that occupies space and has weight

______i. Two or more elements or compounds that are not chemically combined

______j. Change that does not affect the composition of matter

______k. Science that deals with matter, energy, and their interactions

______l. Simple, pure substance that cannot be decomposed by ordinary chemical reactions

______m. Substance that yields hydroxyl ions in solution

______n. Substance that yields hydrogen ions in solution

______o. Two or more elements united in a fixed ratio

1. Base
2. Chemical change
3. Mixture
4. Ion
5. Energy
6. Element
7. Solution
8. Physics
9. Compound
10. Physical change
11. Mineral salts
12. Chemistry
13. Acid
14. Matter
15. Plasma

TEST

______p. Hydrogen ion concentration of a solution; degree to which a solution is acidic or basic

______q. Condition resulting from accumulation of base or depletion of acid reserve in the blood and body tissues

______r. Condition resulting from accumulation of acid or depletion of the alkaline reserve in the blood and body tissues

______s. Any compound that separates into charged particles called ions, which are capable of conducting an electrical current when dissolved in water

16. Acidosis
17. pH
18. Alkalosis
19. Electrolyte

2. Distinguish between states of matter. Write an "S" in the blank before solid matter, an "L" before liquid, and a "G" in the blank before gas.

______a. Has a definite volume and weight but assumes the shape of the container in which it is placed

______b. Has a definite shape, volume, and weight

______c. Has a definite weight but indefinite shape and volume

3. Write the chemical symbols for common elements and compounds. Write the correct answers in the blanks.

a. Oxygen______________________
b. Chlorine______________________
c. Iodine______________________
d. Sodium______________________
e. Carbon______________________
f. Potassium______________________
g. Nitrogen______________________
h. Hydrogen______________________
i. Iron______________________
j. Phosphorus______________________
k. Sodium chloride______________________
l. Hydrochloric acid______________________
m. Water______________________
n. Carbon dioxide______________________
o. Hydrogen perioxide______________________

4. Distinguish between physical and chemical changes. Write a "P" in the blanks before physical changes and a "C" in the blanks before chemical changes.

______a. Produce no new substance

______b. Produce new substance

______c. Is irreversible or reversible only with difficulty

______d. Is easily reversible

TEST

5. List forms of energy.

a. ____

b. ____

c. ____

d. ____

e. ____

6. Distinguish between properties of acids and bases. Write an "A" in the blanks before acids and a "B" in the blanks before bases.

______a. Pungent odor

______b. Soapy or slippery feeling

______c. Bitter taste

______d. Sour taste

______e. pH above 7

______f. pH 7 or below

7. Select from the following list common properties of acids and bases. Write an "X" in the blank before each correct answer.

______a. Are essential for the formation of teeth and bones

______b. Cause certain dyes to undergo color changes

______c. Are essential to the process of digestion

______d. React with each other to produce salts and water

8. Select from the following list functions of mineral salts in the human body. Write an "X" in the blank before each correct answer.

______a. Help to maintain fluid balance

______b. Help to increase appetite

______c. Help to maintain acid-base balance

______d. Build and maintain skeletal tissue

______e. Aid in digestion

______f. Lower blood pressure

TEST

9. Match to their correct definitions terms associated with basic life sciences. Write the correct numbers in the blanks.

______a. Study of microscopic structure of tissue

______b. Study of minute living organisms

______c. Total physical and chemical processes and reactions taking place within an organism

______d. Organic catalyst produced by living cells

______e. Study of life

______f. Ingestion and digestion of a particular substance such as bacteria or dust, by a cell

______g. Study of function

______h. Smallest unit into which a substance may be divided without losing its characteristics

______i. Pertaining to the internal organs

______j. Study of structure

______k. Ability to convey an impulse

______l. Substance that increases the rate of a chemical reaction without being permanently altered itself

______m. Living material in all cells

______n. Study of cells

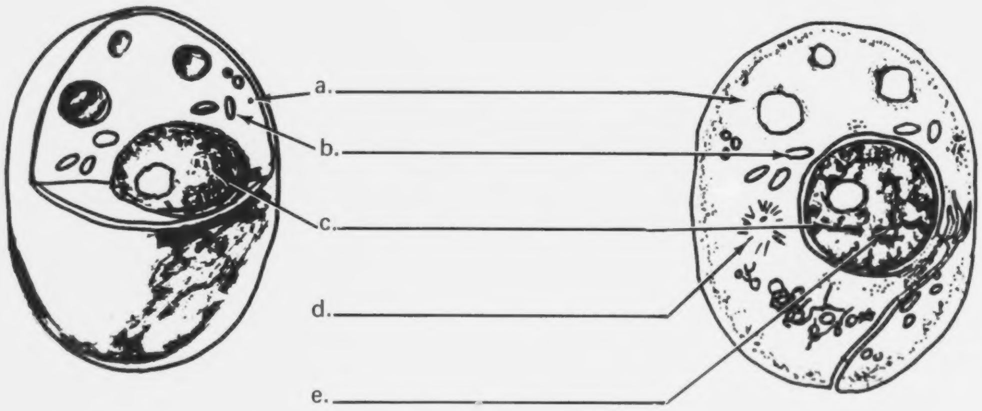
______o. State of chemical balance between the cell and its environment

______p. Process by which cells divide and reproduce themselves to produce higher forms of life

1. Phagocytosis
2. Enzyme
3. Conductivity
4. Physiology
5. Metabolism
6. Mitosis
7. Homeostasis
8. Anatomy
9. Visceral
10. Biology
11. Cytology
12. Microbiology
13. Molecule
14. Protoplasm
15. Histology
16. Catalyst

TEST

10. Label the basic parts of a cell. Write the correct names in the blanks.



11. Match basic cell components to their correct descriptions. Write the correct numbers in the blanks.

______a. Control center containing chromatin and DNA

______b. Body in the nuclear material that determines heredity

______c. Outer wall; holds the cell together

______d. Region near the nucleus that contains some DNA and aids in cell division

______e. Areas that carry on chemical reactions and produce energy

______f. Part of the nucleus; regulates cell production and growth

______g. Colorless, transparent substance containing dissolved salts and food substances

1. Cell membrane
2. Centrosome
3. Chromatin granules or material
4. Chromosome
5. Cytoplasm
6. Mitochondria
7. Nucleus

TEST

12. Distinguish among different types of tissue. Write an "E" in the blank before functions of epithelial tissue, a "C" before connective tissues, an "M" before muscle tissue, and an "N" in the blank before nerve tissue.

_____a. Ensures movement; dilates, contracts

_____b. Carries nerve impulses from a portion of the brain or spinal cord to all parts of the body

_____c. Connects tendons; supports bones; lines the skin; protects bursal sacs

_____d. Protects skin; secretes hormones; absorbs vitamin D; receives sensations

13. Identify the abdominopelvic regions of the body. Write the correct numbers in the blanks.

_____a. Epigastrium

_____b. Right hypochondrium

_____c. Left hypochondrium

_____d. Right inguinal

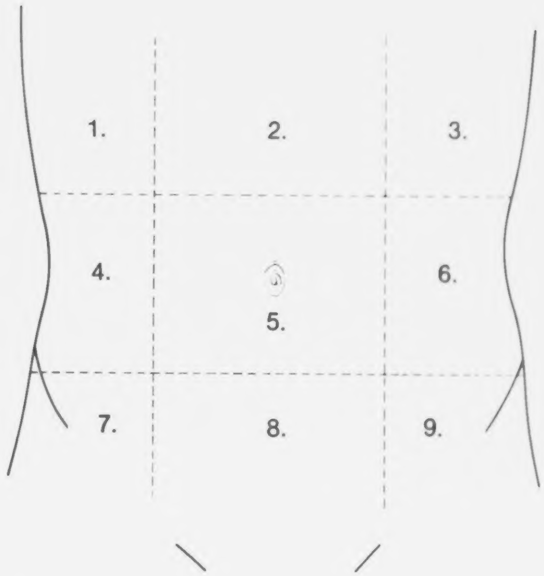
_____e. Left inguinal

_____f. Right lumbar

_____g. Left lumbar

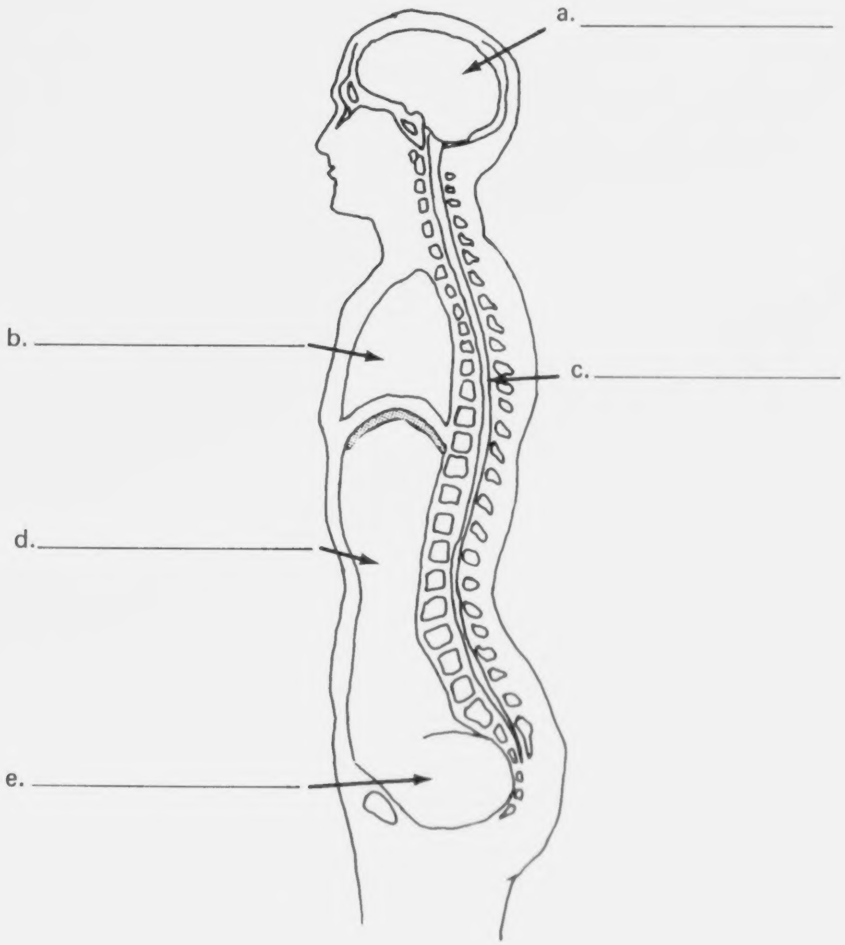
_____h. Suprapubic

_____i. Umbilical



TEST

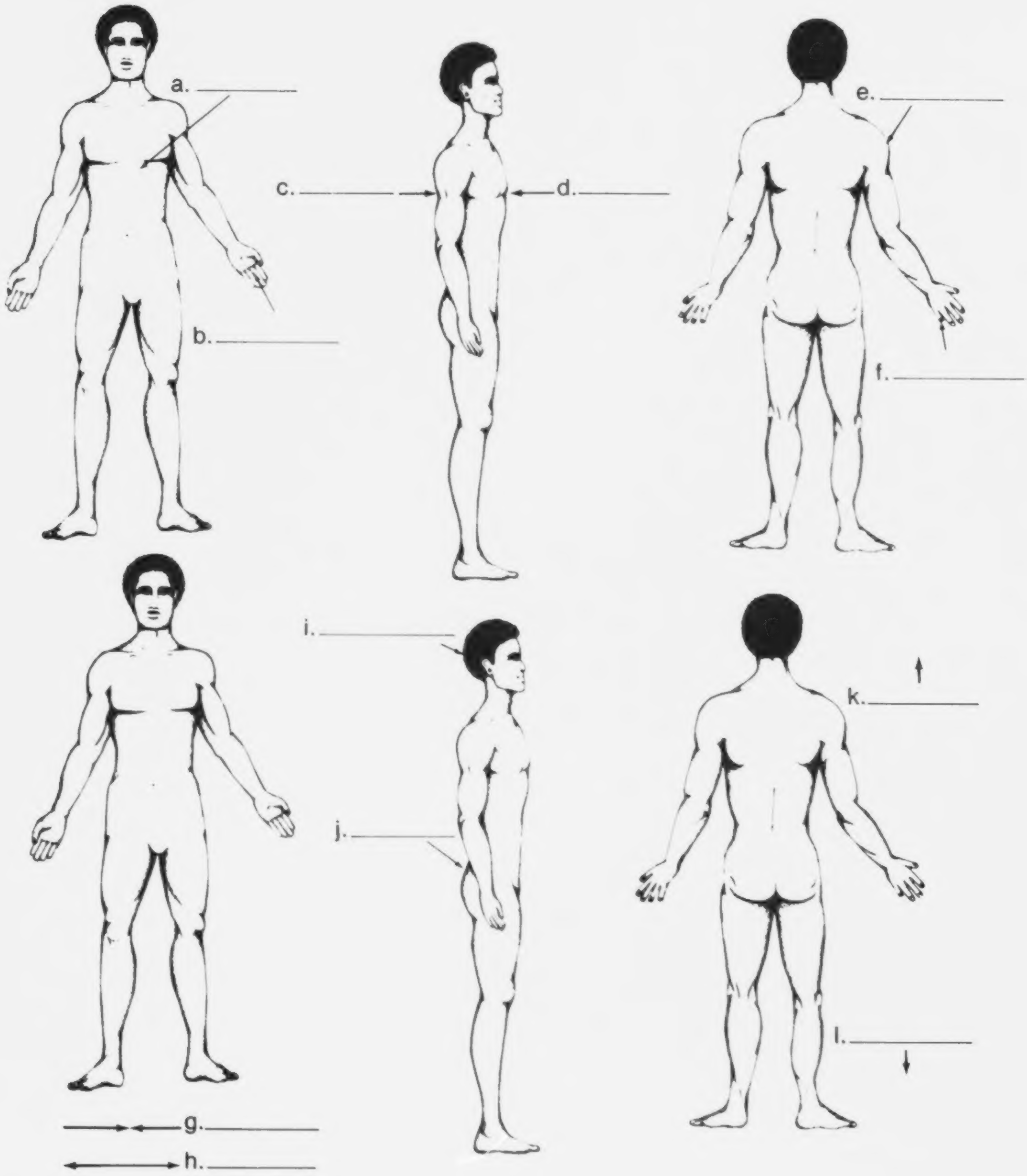
14. Label the body cavities on the following diagram. Write the correct names in the blanks.



TEST

15. Identify directional terms on the following diagrams. Write the correct terms in the blanks.

Posterior
Medial
Peripheral
Anterior
Central
Inferior
Superior
Cranial
Lateral
Distal
Caudal
Proximal



TEST

(NOTE: Test item 16 lists an assigment sheet. It is an important part of this test. If you have not completed it, check with your instructor.)

16. Classify the pH of solutions.

BASIC PHYSICAL AND LIFE SCIENCES
UNIT III

ANSWERS TO TEST

1. a. 7
   b. 11
   c. 2
   d. 12
   e. 5
   f. 4
   g. 15
   h. 14
   i. 3
   j. 10
   k. 8
   l. 6
   m. 1
   n. 13
   o. 9
   p. 17
   q. 18
   r. 16
   s. 19

2. a. L
   b. S
   c. G

3. a. O
   b. Cl
   c. I
   d. Na
   e. C
   f. K
   g. N
   h. H
   i. Fe
   j. P
   k. NaCl
   l. HCl
   m. H_2O
   n. CO_2
   o. H_2O_2

4. a. P
   b. C
   c. C
   d. P

5. a. Heat
   b. Mechanical
   c. Radiant
   d. Electrical
   e. Chemical

6. a. A
   b. B
   c. B
   d. A
   e. B
   f. A

7. b, d

8. a, c, d

ANSWERS TO TEST

9. a. 15
b. 12
c. 5
d. 2
e. 10
f. 1
g. 4
h. 13
i. 9
j. 8
k. 3
l. 16
m. 14
n. 11
o. 7
p. 6

10. a. Cytoplasm
b. Mitochondria
c. Nucleus
d. Centrosome
e. Chromatin material

11. a. 7
b. 4
c. 1
d. 2
e. 6
f. 3
g. 5

12. a. M
b. N
c. C
d. E

13. a. 2
b. 1
c. 3
d. 7
e. 9
f. 4
g. 6
h. 8
i. 5

14. a. Cranial cavity
b. Thoracic cavity
c. Spinal cavity
d. Abdominal cavity
e. Pelvic cavity

15. a. Central
b. Peripheral
c. Posterior
d. Anterior
e. Proximal
f. Distal
g. Medial
h. Lateral
i. Cranial
j. Caudal
k. Superior
l. Inferior

16. Evaluated to the satisfaction of the instructor

BASIC MICROBIOLOGY
UNIT IV

SUGGESTED ACTIVITIES

I. Unit contents
   - A. Objective sheet
   - B. Suggested activities
   - C. Supplements
     1. Supplement #1 — Microbial Diseases
     2. Supplement #2 — Crossword Puzzle
     3. Supplement #3 — Avoiding Food-Borne Illness
   - D. Transparency masters
     1. TM #1 — Protozoa
     2. TM #2 — Fungi
     3. TM #3 — Bacteria
     4. TM #4 — Rickettsiae and Viruses
     5. TM #5 — Metazoa
     6. TM #6 — Protozoan Infections
     7. TM #7 — Types of Isolation
   - E. Information sheet
   - F. Job Sheet #1 — Use Proper Handwashing Technique
   - G. Test
   - H. Answers to test

II. Instructor's guide
   - A. Review unit and plan presentation.
   - B. Order or obtain materials to supplement unit.
     1. Films
        - a. *Handwashing in Patient Care*. 15 minutes, 1968. Available from Oklahoma State Department of Health, 3400 North Eastern, Oklahoma City, Oklahoma 73105. This film demonstrates the importance of the conscientious practice of handwashing to avoid transmission of pathogens.

SUGGESTED ACTIVITIES

b. *Medical Asepsis*. 16 minutes, 1982. Available from Medcom, Inc., 7077 Orangewood Avenue, Garden Grove, California 92641. This film discusses asepsis as a fundamental principle of infection control.

2. Transparencies and competency profiles

(NOTE: Transparencies and competency profiles for this manual are available from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

C. Introduce unit.

- Discuss the importance of infection control. Point out that infection control is **everyone's** responsibility.
- Trace the spread of a common infectious disease recently seen in your school. Point out how rapidly infections can spread, and ask students what they can do to prevent being infected or infecting someone else.
- Take a field trip to a local laboratory, and have the students observe microorganisms under a microscope.
- Have the students name as many common infectious diseases they can think of; discuss how they are transmitted.
- Refer to any information recently covered in the national news regarding an infectious disease.
- Discuss immunity and how some people are more susceptible to disease than others.
- Invite a guest speaker from the local health department to discuss community infection control and immunizations.
- Tell the students that antibiotics were not available for public use until after World War II, and were not available for their grandparents or some of their parents.

D. Discuss unit and specific objectives.

E. Discuss information sheet and job sheet.

1. Use Information Sheet, Section I, to discuss terms and definitions associated with microbiology.

    - Show pictures from a basic microbiology text to illustrate the many different types of microbes.
    - Explain that in some instances pathogens may start out nonpathogenic.

    EXAMPLE: E Coli is a nonpathogen in the colon; but if it gets into the urinary tract, it is then pathogenic.

SUGGESTED ACTIVITIES

- Discuss water treatment procedures to purify the drinking water of a community.
- Explain that pasteurization eliminates certain pathogens in milk.

2. Use Information Sheet, Sections II and III, to discuss vital functions and factors influencing growth and microorganisms.
    - Point out that every living organism has functions and needs a certain environment to sustain life.
    - Explain that a warm, moist, dark environment is an excellent place for growth of microorganisms. Have them think about the mildew easily grown in showers.
    - Ask the students where a disinfectant is used in their homes, and why they are necessary.
    - Have students think about the difference in the way garbage smells in the summertime versus the wintertime.
3. Use Information Sheet, Section IV, to discuss types of microorganisms.
    - Show Transparencies #1-#6 while discussing types of microorganisms.
    - Use Supplement #1 to point out common diseases caused by microorganisms.
4. Use Information Sheet, Section V, to discuss classes of bacteria.
    - Stress that nonpathogens are necessary to life and that pathogens are the harmful ones.
5. Use Information Sheet, Sections VI-XI, to discuss asepsis.
    - Tie the terms associated with medical asepsis to the way organisms are spread.

      EXAMPLES: Mosquitos and malaria, infected dogs and rabies.
    - For the students interested in working in a hospital, explain that the term *nosocomial infection* means an infection occurring while the patient is in the hospital.
    - Explain that *epidemiology* is the term given for infection control, and that each hospital has a person in charge of infection control.
    - Relate the microbial diseases listed in Supplement #1 to the way organisms are spread.

SUGGESTED ACTIVITIES

- Show Transparency #7 when discussing types of isolation.
- Stress that equipment used on more than one client can easily transmit disease if not cared for properly.
- Explain that handwashing should become an automatic action; and as well as protecting others, it also protects the health care worker.
- Point out that according to the U.S. Centers for Disease Control (CDC), there are at least 300 food-borne illnesses.
- Share Supplement #3 with the class.
- Point out that one-tenth of the people who contract salmonellosis will develop chronic arthritis as a result. One explanation may be that the immune systems of people who have a certain gene, HLA-B27, may not react normally to a component of the salmonellae.
- Give students the number of the USDA toll-free meat and poultry hotline, 1-800-535-4555 (447-3333 in the District of Columbia).
- Point out how often people touch their faces or put their hands near their mouths without being aware of it. People who put pencils in their mouths have no way of knowing who has already handled those pencils.
- Stress that anyone who has a surgical incision or wound is especially prone to infection, sterility is *essential* in surgical areas, and all equipment used should be sterile.
- Stress that prevention is always better than the cure.
- Point out that antibiotics have no effect on influenzas and colds, and that people who demand antibotics for those illnesses will build a resistance to antibiotics.
- Take the students to a central supply area or a medical office to see how surgical articles are sterilized and wrapped.
- If possible, take the students on a tour through a surgical suite to show them the precautions taken to prevent infection.
- Have the students practice the skills for Job Sheet #1, Use Proper Handwashing Techniques, until proficient.
- Have the student complete Supplement #2, the crossword puzzle, to reinforce information learned in this unit.

F. Give test.

G. Reteach and retest if necessary.

H. Complete appropriate section of students' competency profiles.

SUGGESTED ACTIVITIES

III. Unit references

A. Kingsley, Victor. *Basic Microbiology*. Philadelphia: W.B. Saunders Company, 1982.

B. Moser, Penny Ward. "It Must Have Been Something You Ate." *Discover* (February, 1987), pp. 94-100.

C. Sloan, Jamee Reid. *Health Service Careers*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1979.

D. Sorrentino, Sheila A. *Textbook for Nursing Assistants*. St. Louis, Missouri: The C.V. Mosby Company, 1984.

BASIC MICROBIOLOGY
UNIT IV

SUPPLEMENT #1 — COMMON MICROBIAL DISEASES

The following list includes the more common diseases caused by microorganisms. This list cannot be all-inclusive because so many diseases are microbial in origin. Some diseases, such as pneumonia, can be bacterial as well as viral.

BACTERIA

Abscesses
Anthrax
Barber's Itch
Boils
Cholera
Diphtheria
Dysentary
Gas Gangrene
Gonorrhea
Impetigo
Meningitis
Osteomyelitis
Pertussis
Pneumonia
Rheumatic Fever
Scarlet Fever
Septicemia
Syphilis
Tetanus
Tonsillitis
Tuberculosis
Typhoid Fever

FUNGI

Athlete's Foot
Barber's Itch
Histoplasmosis
Ringworm
Valley Fever (Coccidioidomycosis)

PROTOZOA

Amebic Dysentery
Malaria
Trichomonas

RICKETTSIAE

Rocky Mountain Spotted Fever
Typhus

VIRUSES

Bronchitis
Chickenpox
Coryza
German Measles
Herpes Simplex
Herpes Zoster
Influenza
Measles
Mumps
Papilloma
Pharyngitis
Pneumonitis
Poliomyelitis
Rabies
Rubella
Smallpox

BASIC MICROBIOLOGY
UNIT IV

SUPPLEMENT #2 — CROSSWORD PUZZLE

Test your ability to remember terms associated with basic microbiology by using the clues given below to complete the crossword puzzle on the following page.

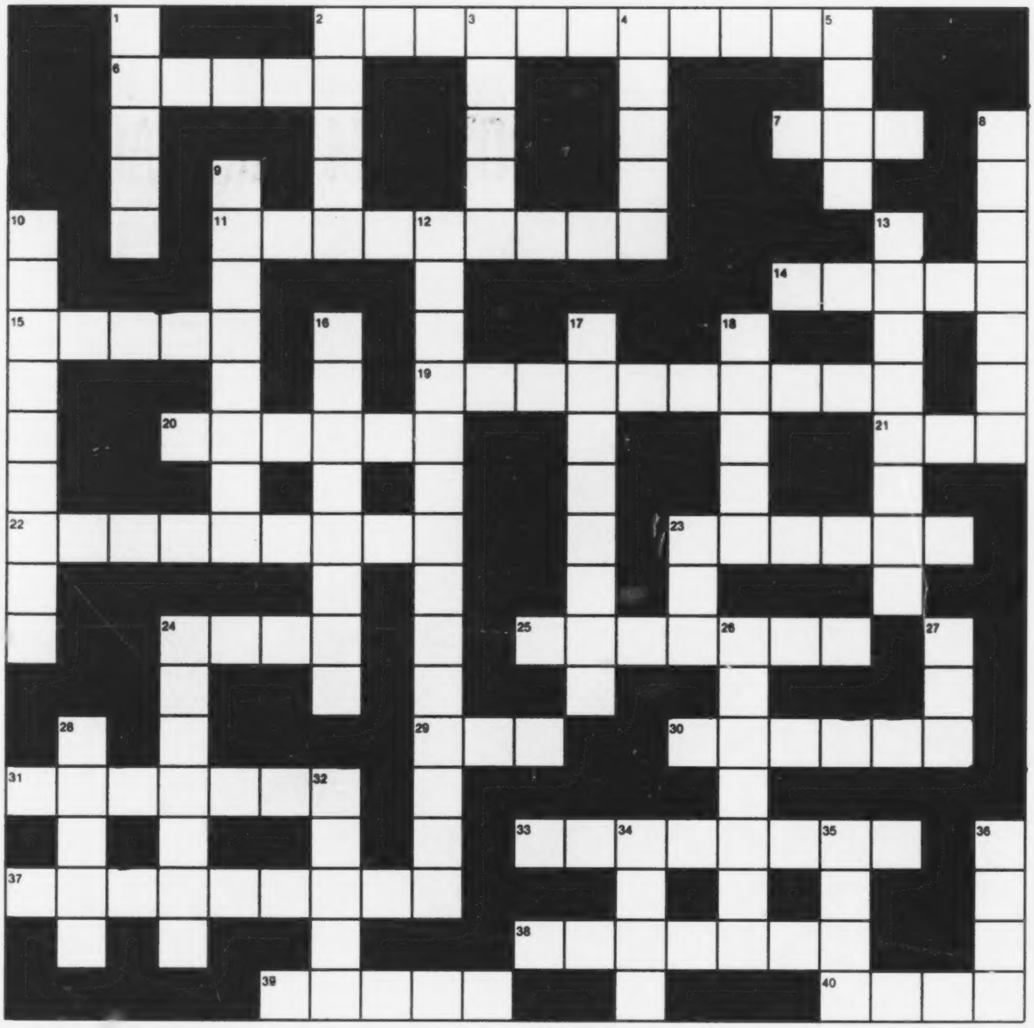
ACROSS CLUES

2. The most important procedure in medical asepsis
6. Last letter of Greek alphabet
7. Attempt
11. Apparatus for sterilizing objects, using steam under pressure
14. Plants that live on other plants or animals
15. Throw out
19. Organism living upon dead or decaying matter
20. Dwarfs or giants that live in caves (folklore)
21. Male sheep
22. It prevents spread of infection or contagious disease from client to other people
23. Microorganism that can live and grow only in the presence of oxygen
24. Young male horse
25. It can be direct or indirect
29. What you pay Uncle Sam
30. Infection, contamination
31. Free of microorganisms and spores
33. Organism that lives within, upon, or at the expense of another organism known as the host
37. Invasion of the body by microorganisms
38. Extremely small organisms that grow in living cells
39. Vaporized water
40. Exhaust

DOWN CLUES

1. Multicellular plants that grow rapidly under favorable conditions
2. Custom
3. Tool for boring holes in wood, metal, etc.
4. Bacterium protected by a hard shell that forms around the microorganism
5. Microorganism
8. Condition most favorable for growth or activity
9. Single-cell organism that can multiply rapidly
10. To destroy microorganisms by exposure to chemicals or physical agents
12. Infection transmitted between clients who are infected with different organisms
13. Microorganism that can live and grow only without oxygen
16. Parasite worm
17. One-celled animals capable of movement by various means
18. Entire
23. Industrious insect
24. Person who has and spreads disease-causing organism, but does not show any symptoms
26. Absence of pathogens
27. Short for *gasoline*
28. Rotten smell
32. Throw out of house
34. Unusual
35. Exam
36. Skin opening

SUPPLEMENT #2



SUPPLEMENT #2

		1 M				2 H	A	N	3 D	W	A	4 S	H	I	N	5 G			
		6 O	M	E	G	A			R			P				E			
		L				B			I			O			7 T	R	Y		8 O
		D		9 B		I			L			R				M			P
10 S		S		11 A	U	T	O	12 C	L	A	V	E					13 A		T
T				C				R							14 F	U	N	G	I
15 E	J	E	C	T		16 H		O			17 P			18 W			A		M
R				E		E		19 S	A	P	R	O	P	H	Y	T	E		U
I			20 T	R	O	L	L	S			O			O			21 R	A	M
L				I		M		I			T			L			O		
22 I	S	O	L	A	T	I	O	N			O		23 A	E	R	O	B	E	
Z						N		F			Z		N				E		
E			24 C	O	L	T		E		25 C	O	N	T	26 A	C	T		27 G	
			A			H		C			A			S				A	
	28 S		R					29 T	A	X			30 S	E	P	S	I	S	
31 S	T	E	R	I	L	32 E		I						P					
	I		I			V		O		33 P	A	34 R	A	S	I	35 T	E		36 P
37 I	N	F	E	C	T	I	O	N				A		I		E			O
	K		R			C				38 V	I	R	U	S	E	S			R
					39 S	T	E	A	M			E				40 T	I	R	E

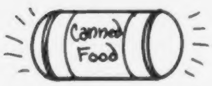
BASIC MICROBIOLOGY
UNIT IV

SUPPLEMENT #3 — AVOIDING FOOD-BORNE ILLNESS

(NOTE: The USDA has a toll-free hotline to answer questions about safe practice for meat and poultry. That number is 1-800-535-4555; in District of Columbia, 447-3333.)

CANNED GOODS

Do not buy



cans with *"bulges"* on the ends: those bulges may indicate bacterial growth inside.

Be wary of cans that are *dented* or *rusted*: breaks in cans may allow germs to enter.

FROZEN FOODS

Buy only

those that are *frozen solid.*

Never buy

partially thawed frozen foods or those that have been frozen, thawed, and re-frozen.

FRESH-COOKED FOODS

Be alert

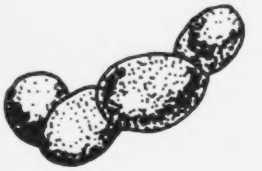
for signs of spoilage, especially in the *hot summer months* when germs multiply fast.

Cream-filled bakery goods and salads with eggs or mayonnaise-type dressing are *especially dangerous* unless they have been properly refrigerated.

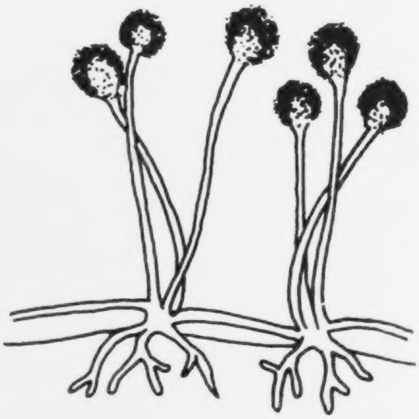
- Do not cut meat on a wooden cutting board: thousands of salmonellae can live in a single knife mark. (Rub down a board with one part bleach to eight parts water, followed by a clear-water rinse.)
- Carry the meat in from the grill on a SEPARATE PLATE from the one that carried it out.
- Never leave food out at room temperature. Move meat from the freezer to the refrigerator the previous night, or thaw meat in a microwave oven.
- Wash poultry in cold water before cooking it.
- Do not let raw meat juices drip on other foods.
- After washing meat, rinse the sink with hot soapy water.
- Do not use wooden utensils on meat.
- Keep refrigerated food colder than 40°F.
- Keep hot foods at a buffet hotter than 140°F.

Protozoa

Fungi



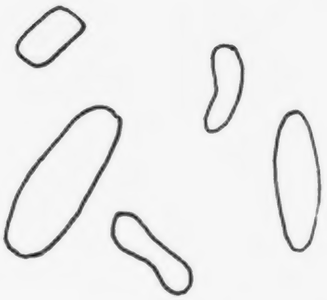
Yeast Cells



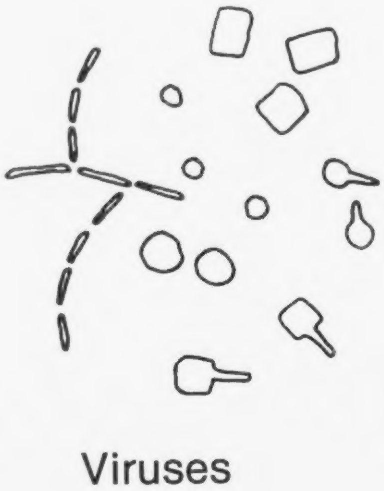
Molds

Rickettsiae and Viruses

(As Seen Under an Electron Microscope)

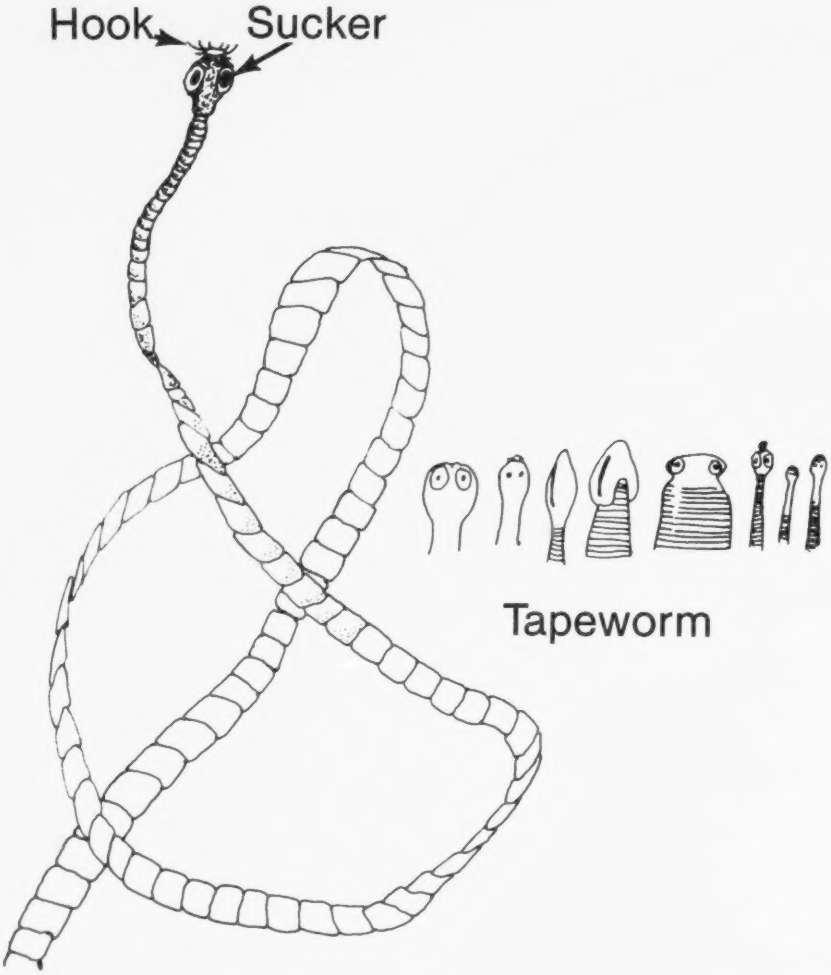


Rickettsiae



Viruses

Metazoa
(Helminths)



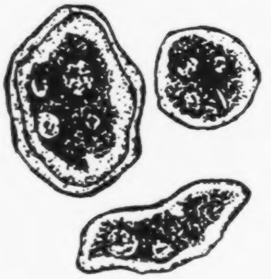
Tapeworm

Roundworm

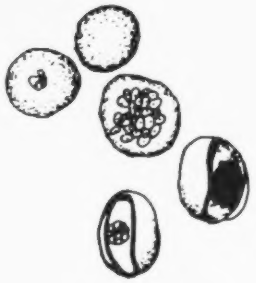
Pinworm

Hookworm

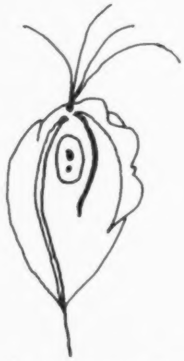
Protozoan Infections



Amebic Dysentery
(Entamoeba Histolytica)

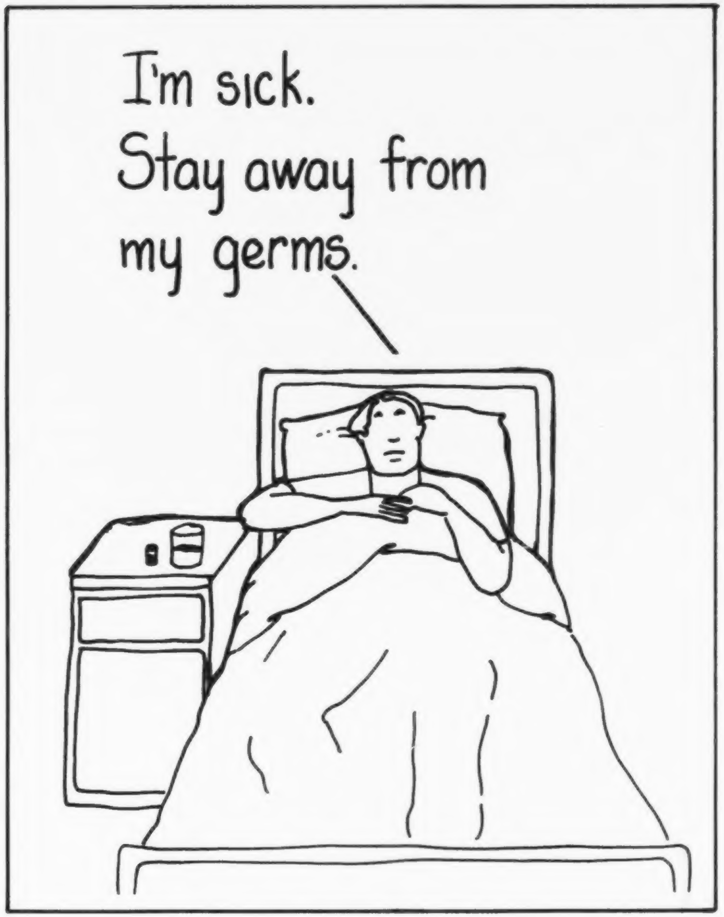


Malaria
(Plasmodium Vivax)

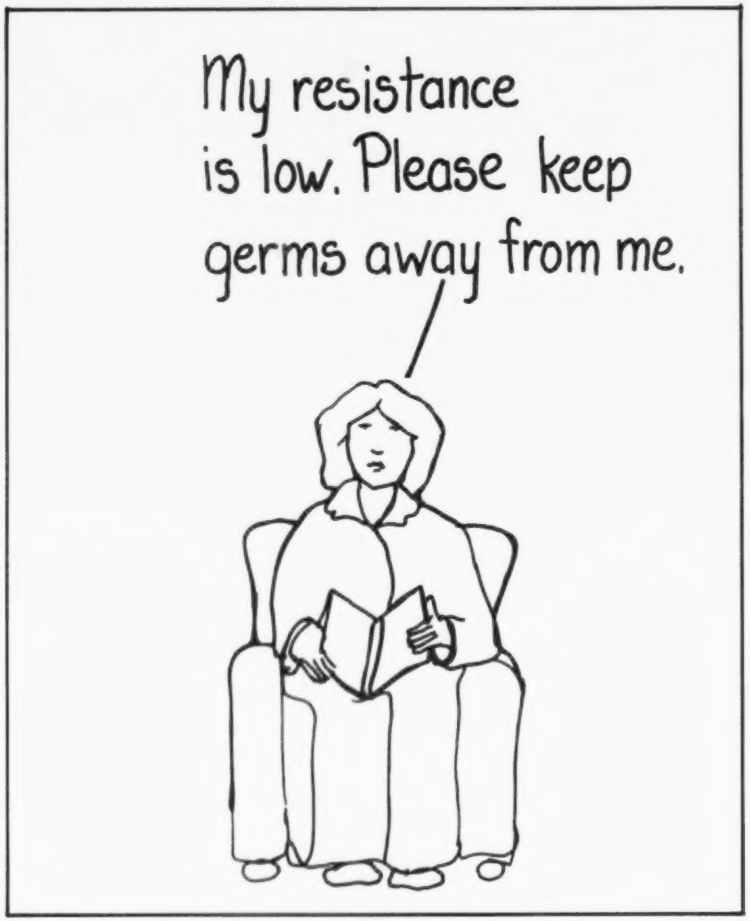


Trichomonas
Vaginalis

Types of Isolation


I'm sick.
Stay away from
my germs.

Isolation



Reverse Isolation

BASIC MICROBIOLOGY
UNIT IV

TEST

NAME ____ SCORE ________________

1. Match terms and definitions associated with basic microbiology. Write the correct numbers in the blanks.

______a. Microorganism that can live and grow only in the presence of oxygen

1. Aerobe
2. Anaerobe
3. Host
4. Parasite

______b. Microorganism that usually does not cause an infection

1. Nonpathogen
2. Parasite
3. Pathogen
4. Spore

______c. Multicellular plants that grow rapidly under favorable conditions

1. Molds
2. Spores
3. Weeds
4. Yeasts

______d. Bacterium protected by a hard shell that forms around the microorganism

1. Parasite
2. Protoplasm
3. Spore
4. Virus

______e. Tiny living plants or animals of varying shapes and sizes that cannot be seen without a microscope; microbes

1. Bacteria
2. Fungi
3. Microorganisms
4. Viruses

______f. Radiant energy that causes tanning of the skin, production of vitamin D, and destruction of some organisms

1. Fluorescent rays
2. Radioactive rays
3. Ultraviolet rays
4. X rays

______g. Condition most favorable for growth or activity

1. Optimum
2. Oxygen
3. Sunlight
4. Water

______h. Green substance in plants that manufactures carbohydrates to use for energy

1. Chlorophyll
2. Grass
3. Nectar
4. Pus

TEST

______i. Study of microorganisms
1. Bacteriology
2. Biology
3. Microbiology
4. Physiology

______j. Organism that lives within, upon, or at the expense of another living organism known as the *host*
1. Nonpathogen
2. Mold
3. Parasite
4. Saprophyte

______k. Organism living upon dead or decaying matter
1. Fungus
2. Saprophyte
3. Spore
4. Yeast

______l. Unicellular plants that reproduce by budding
1. Helminth
2. Molds
3. Spores
4. Yeasts

______m. Microorganism that is harmful and capable of causing disease
1. Helminth
2. Nonpathogen
3. Pathogen
4. Spore

______n. Parasitic worm
1. Bacteria
2. Helminth
3. Microorganism
4. Pathogen

______o. Microorganism that can live and grow only without oxygen
1. Aerobe
2. Anaerobe
3. Host
4. Parasite

2. Name vital functions of living organisms.

a. ____

b. ____

c. ____

d. ____

e. ____

f. ____

TEST

3. Select from the following list factors that influence growth of microorganisms. Write an "X" in the blank before each correct answer.

______a. Chlorophyll

______b. Activity

______c. Darkness

______d. Food

______e. Oxygen

______f. Temperature

______g. Moisture

______h. Noise

4. Match types of microorganisms to their correct descriptions. Write the correct numbers in the blanks.

______a. One-celled animals capable of movement by various means

1. Bacteria
2. Fungi
3. Protozoa
4. Rickettsiae
5. Viruses

______b. Plants that live on other plants or animals

1. Bacteria
2. Fungi
3. Protozoa
4. Rickettsiae
5. Viruses

______c. Single-celled organisms that can multiply rapidly; often called *germs*

1. Bacteria
2. Fungi
3. Protozoa
4. Rickettsiae
5. Viruses

______d. Small microorganisms found in the tissue of lice, fleas, ticks, and mites; transmitted to man through bites of insects

1. Bacteria
2. Fungi
3. Protozoa
4. Rickettsiae
5. Viruses

______e. Extremely small organisms that grow in living cells

1. Bacteria
2. Fungi
3. Protozoa
4. Rickettsiae
5. Viruses

5. Distinguish between types of bacteria. In the blank before each characteristic, write an "N" for nonpathogenic bacteria and a "P" for pathogenic bacteria.

______a. Cause disease

______b. Aid in production of some foods and chemicals

______c. Assist in decomposition of organic matter

TEST

6. Match terms and definitions associated with asepsis. For each of the following definitions, write the number of the correct term in the blank.

______a. To make unsterile or unclean by direct contact with or exposure to microorganisms

1. Contaminate
2. Infection
3. Isolation
4. Sepsis

______b. Procedures used to protect client and environment from the transmission of pathogens from one person to another

1. Medical asepsis
2. Sterile
3. Sterilize
4. Surgical asepsis

______c. Association between people or objects; exposure to pathogenic organisms

1. Carrier
2. Contact
3. Contagious
4. Contaminate

______d. Person who has and spreads a disease-causing organism but does not show any symptoms of that disease

1. Carrier
2. Contact
3. Contagious
4. Cross-infection

______e. Infection transmitted between clients infected with different pathogens

1. Contaminate
2. Cross-infection
3. Infection
4. Sepsis

______f. Infection, contamination

1. Asepsis
2. Contaminate
3. Cross-infection
4. Sepsis

______g. Absence of pathogens

1. Asepsis
2. Infection
3. Isolation
4. Sepsis

______h. Communicable; readily transmitted from one person to another

1. Carrier
2. Contagious
3. Contaminate
4. Cross-infection

______i. Invasion of the body by microorganisms

1. Asepsis
2. Carrier
3. Infection
4. Sepsis

TEST

______j. Touching of two individuals or organisms

1. Contaminate
2. Direct contact
3. Indirect contact
4. Infection

______k. Some means of transmitting disease other than direct contact

1. Contagious
2. Contaminate
3. Indirect contact
4. Infection

______l. To free from pathogenic organisms or to render them inert

1. Clean
2. Disinfect
3. Sterile
4. Sterilize

______m. Apparatus for sterilizing objects, using steam under pressure

1. Autoclave
2. Disinfection
3. Steam kettle
4. Sterilization

______n. To destroy microorganisms by exposure to chemical or physical agents

1. Disinfect
2. Medical asepsis
3. Sterilize
4. Surgical asepsis

______o. Free of microorganisms and spores

1. Clean
2. Disinfected
3. Septic
4. Sterile

______p. Procedures used to keep objects or areas sterile or completely free of microorganisms

1. Clean
2. Medical asepsis
3. Sterile
4. Surgical asepsis

______q. Contaminated, but microorganisms have been removed

1. Clean
2. Dirty
3. Dusty
4. Sterile

TEST

7. List six ways organisms are spread.

   a. ______________________________

   b. ______________________________

   c. ______________________________

   d. ______________________________

   e. ______________________________

   f. ______________________________

8. Describe types of isolation.

   a. Isolation — ______________________________

   ____

   ____

   b. Reverse or protective isolation — ______________________________

   ____

   ____

9. List rules for aseptic care of equipment and supplies.

   a. ______________________________

   b. ______________________________

   c. ______________________________

   d. ______________________________

   e. ______________________________

10. List four reasons for maintaining asepsis. Use your own words.

   a. ______________________________

   ____

   b. ______________________________

   ____

TEST

c. ____________________

____

d. ____________________

____

11. Name methods of disinfection and/or sterilization.

a. ____________________

b. ____________________

c. ____________________

d. ____________________

(NOTE: Test item 12 lists the job sheet. It is an important part of this test. If it has not been completed, check with your instructor.)

12. Demonstrate the ability to use proper handwashing technique.

BASIC MICROBIOLOGY
UNIT IV

ANSWERS TO TEST

1. a. 1
   b. 1
   c. 1
   d. 3
   e. 3
   f. 3
   g. 1
   h. 1
   i. 3
   j. 3
   k. 2
   l. 4
   m. 3
   n. 2
   o. 2

2. a. Metabolism
   b. Growth
   c. Reproduction
   d. Irritability
   e. Motion
   f. Protection

3. c, d, e, f, g

4. a. 3
   b. 2
   c. 1
   d. 4
   e. 5

5. a. P
   b. N
   c. N

6. a. 1
   b. 1
   c. 2
   d. 1
   e. 2
   f. 4
   g. 1
   h. 2
   i. 3
   j. 2
   k. 3
   l. 2
   m. 1
   n. 3
   o. 4
   p. 4
   q. 1

ANSWERS TO TEST

7. Answer should include any six of the following
   - a. Air
   - b. Water
   - c. Food
   - d. Eating and drinking utensils
   - e. Personal hygiene equipment
   - f. Animals
   - g. Fomites
   - h. Direct contact

8. Description should include the following
   - a. Isolation — Prevents spread of infection or contagious disease from client to other people
   - b. Reverse or protective isolation — Protects client from microorganisms of other people

9. a. Discard disposables in a safe manner
   - b. Clean and disinfect washable articles thoroughly after use
   - c. Scrub and sterilize or disinfect metal instruments after use
   - d. Disinfect and dry rubber articles that are not disposable
   - e. Use equipment carefully and safely to avoid contamination and waste

10. Answer should include any four of the following
    - a. Carelessness endangers the health of health care personnel as well as that of the client
    - b. Prevention of disease is easier than the cure
    - c. Some pathogens can be present in the nasal cavities, throats, or on the skin of clients and health care personnel without causing any clinical symptoms
    - d. Pathogens can be carried from one client to another on poorly sanitized equipment such as thermometers and emesis basins
    - e. Some strains of microorganisms can survive for months or years in dust and bedding, especially blankets or mattresses
    - f. Some clients are especially susceptible to bacterial infection

11. a. Boiling
    - b. Autoclaving
    - c. Dry heat
    - d. Chemical disinfection

12. Performance skills evaluated to the satisfaction of the instructor

INTEGUMENTARY SYSTEM
UNIT I

SUGGESTED ACTIVITIES

I. Unit contents

  A. Objective sheet

  B. Suggested activities

  C. Supplements

    1. Supplement #1 — Common Diseases and Disorders of the Integumentary System

    2. Supplement #2 — Diagnostic Test and Procedures Used in Treatment of Allergies

    3. Supplement #3 — Crossword Puzzle

  D. Transparency master: TM #1 — The Skin

  E. Assignment Sheet #1 — Identify Parts of the Skin

II. Instructor's guide

  A. Review unit and plan presentation.

  B. Order or obtain materials needed to supplement unit.

    1. Magnifying glasses for demonstration purposes

    2. Microscopes and prepared slides of skin cells

    3. Filmstrip: *Physical Assessment: The Skin and Extremities*©

    (NOTE: This 24-minute filmstrip emphasizes the importance of examining the patient's skin and extremities. Filmstrip depicts how lesions are classified, portrays a systematic assessment of the skin and extremities, and presents techniques for evaluating the patient's range of motion. Order from Medcom, Inc., P.O. Box 116, Garden Grove, California 92642. Call toll free 1-800-854-2485.)

    4. Transparency and competency profiles

    (NOTE: Transparencies and competency profiles for this manual are available from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

SUGGESTED ACTIVITIES

C. Introduce unit by stressing that the skin is the body's first line of defense.

  - Ask students to look closely at their skin with a magnifying glass. Then have them apply water, lotion, and petroleum jelly in separate locations and observe through the magnifying glass what happens to each solution.
  - Have students view scrapings of their skin through a microscope. Ask them to look for specific structures used in the skin's defense system.

D. Provide students with copies of the unit.

E. Discuss information and assignment sheets.

  1. Use Information Sheet, Section I, to introduce students to terms and definitions associated with the integumentary system.
     - Have those students who are having trouble remembering the terms complete the crossword puzzle.
     - Show students examples of appropriate terms.
  2. Use Information Sheet, Sections II and III, to discuss the structure and functions of the skin.
     - Have students complete Assignment Sheet #1 to reinforce this information.
     - Show filmstrip *Physical Assessment: The Skin and Extremities*.
  3. Use Information Sheet, Sections IV and V, to discuss the functions of the skin and its appendages.
  4. Use Information Sheet, Sections VI through VIII, to discuss characteristics of healthy skin, changes that take place during the aging process, and common skin abnormalities.
     - Illustrate your discussion with pictures from journals, textbooks, and periodicals.
     - Make a bulletin board display of pictures of healthy skin, aging skin, and skin containing common abnormalities.
     - Compare pictures of the infant, child, adolescent, adult, and older adult. Discuss changes that skin goes through as an individual ages.
     - Use posters or bulletin board to display pictures of individuals with healthy and unhealthy skin.
     - Explain skin turgor and show students how to check for it.
     - Relate conditions that may cause skin to have some of the abnormalities listed in Section VIII.

SUGGESTED ACTIVITIES

5. Use Information Sheet, Section IX, to introduce students to some of the occupations associated with the integumentary system.

   - Allow students to explore each of the health occupations.
   - Have a dermatologist, a plastic surgeon, and an electrologist speak to the class about their specialty areas.
   - Take a field trip to an electrologist's office to allow students to see the electrologist performing specific procedures.
   - If you use Supplement #1, ask the dermatologist to discuss briefly the diseases and disorders of the integumentary system. Stress that impetigo is infectious and is not always associated with poor hygiene as many people think. Compare and contrast Herpes Simplex I and II.
   - If you use Supplement #2, take a field trip to an allergist's office or to a dermatologist's office to observe skin tests for allergies and to observe treatment procedures.

F. Give test.

G. Critique test and discuss with class.

H. Reteach and retest if necessary.

I. Complete appropriate section of students' competency profiles.

III. Unit references

A. Hood, Gail H., and Judith R. Dincher. *Total Patient Care*. St. Louis, Missouri: The C. V. Mosby Company, 1980.

B. Reid, Jamee Noell. *Practical Nursing: Volume III*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1984.

C. Rogers, Helen V. and Ann Benson. *Practical Nursing: Volume I*, rev. by Jamee Reid Sloan. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1981.

D. Scherer, Jeanne. *Introductory Medical-Surgical Nursing*. Philadelphia: J. B. Lippincott Company, 1977.

INTEGUMENTARY SYSTEM
UNIT I

SUPPLEMENT #1 — COMMON DISEASES AND DISORDERS OF THE INTEGUMENTARY SYSTEM

BACTERIAL AND VIRAL INFECTIONS

Furuncle — Acute localized infection of tissue, skin, gland, or hair follicle

Furuncles can become more involved and extend deeper into the tissues, causing carbuncles. Usually the causative organisms are staph or strep. The condition causes local swelling and pain and may cause purulent exudate if not treated early. Treatment consists of applying warm, moist dressings, giving antibiotics, and incising and draining the furuncle if extended infection occurs. Furuncles can spread, and care should be taken when treating them as both staph and strep are very contagious.

Impetigo contagiosa — Acute infection characterized by formation of vesicles that rupture and form yellow crusts

Impetigo usually appears around the mouth and nose area but can spread if not treated properly. Treatment consists of softening the crusts with soap and water or oil before removing, and then applying topical antibiotics. Systemic antibiotics may be given. Precautions should be taken when treating because the organisms usually contain staph or strep that could spread to other members of the family.

Herpes simplex (cold sores) — Thin-walled vesicles that form and recur where the mucous membrane joins the skin; caused by a virus

Herpes simplex is seen as a blister surrounded by red, inflammed skin and can occur on the mouth or genitals. Treatment consists of oral antibiotics, topical creams, and analgesics for discomfort.

Herpes zoster (shingles) — Inflammation of the posterior root nerve ganglia of a few segments of the spinal or cranial nerves; results in painful vesicles along the pathway of the nerve; caused by a virus

The painful vesicles along the nerve path are accompanied by fever, malaise, and other related nerve pain. Treatment may include analgesics, sedatives, steroids, and vitamins. Local medications may be used to help dry the vesicle.

FUNGAL INFECTIONS

Tinea barbae (barber's itch), **tinea pedis** (athlete's foot), **tinea capitis** (head), and **tinea corporis** (body) — Infectious fungal skin eruption characterized by the formation of vesicles that crack and scale

The type of infection is indicated by following the word *tinea* with the word that indicates the area of the body affected. Tinea is also commonly known as *ringworm*. Symptoms depend on the area of the body affected, but most areas have inflamed vesicles that cause itching. Treatment consists of the application of topical fungicidal ointments along with oral antifungals and careful cleansing of the affected areas. The fungus can spread, so precautions should be taken.

SUPPLEMENT #1

NONINFECTIOUS DISEASES AND DISORDERS

Acne vulgaris — Inflammatory condition of the sebaceous glands

Acne results in the formation of whiteheads, pustules, and cysts in the skin. Acne is most commonly found on the facial areas and the upper back. It is thought that acne may be caused by genetic, hormonal, bacterial, and dietary factors. Treatment consists of careful cleansing of the skin, topical and oral antibiotics and steroids, restrictions of foods in diet that increase the formation of acne, and cosmetic surgery to remove severe scars.

Alopecia — Lack of hair

Contact dermatitis — Reaction of skin to contact with primary irritant or sensitization to a substance

Plants, soaps, detergents, chemicals, and cosmetics may cause contact dermatitis. Symptoms include itching, burning, swelling, and vesicles in the area that later weep or crust over. Treatment consists of the removal of the irritant and the application of cool compresses and prescribed lotions or ointments.

Seborrhea or seborrheic dermatitis (dandruff) — Acute, inflammatory disease that occurs on oily skin areas with large sebaceous glands

An oily scalp with greasy scales accompanied by itching, swelling, and redness are the symptoms of seborrhea. Treatment consists of regularly cleansing with an antiseborrheic shampoo and the application of antiseptic lotions or medicated ointments between shampoos.

Psoriasis — Chronic, inflammatory skin disease specifically affecting the outer surfaces of the body and the scalp

The cause of psoriasis is not known at this time. Irregular patches of dry, scaly lesions occur with itching in varying degrees on affected areas. Treatment consists of topical ointments and systemic medications. Vitamin A, sedatives, antihistamines, or steroids may be given. Control of the condition may be obtained, but there is no known cure at this time.

COMMON MALIGNANT AND PRECANCEROUS CONDITIONS OF THE SKIN

Basal cell carcinoma — Tumor cells occurring in the epidermis

This type of skin cancer occurs more frequently in the older person than the younger, and is seen in fair-skinned individuals. Males are usually affected more than females. Persons who have prolonged exposure to the sun are more likely to contract this type of skin cancer. The lesion occurs as a slow-growing area that ulcerates, heals, and then recurs. Treatment may include surgery and/or radiation treatments, depending on the size and depth of the lesion.

SUPPLEMENT #1

Melanoma — Malignant tumor composed of anaplastic melanocytes

Melanomas can appear at birthmark and mole sites that are repeatedly irritated. Melanomas have a variety of appearances, but the darker brown and black nevi are apt to become malignant. The area itself can appear in various colors, and the texture has a grainy or pebbly feeling. Treatment includes a wide excision of the tumor and adjacent tissue. The patient needs frequent postoperative examinations to ensure that cancer does not recur.

Leukoplakia — Abnormal thickening and whitening of the epithelium of a mucous membrane

Smooth, irregular, hard, white patches appear on the mucous membranes of the tongue or cheek. Treatment includes surgical excision. The growth of leukoplakia is usually the result of chronic irritation of the mucosa by physical, thermal, or chemical agents. Individuals who smoke pipes or cigarettes, or those who chew tobacco may be prone to developing this type of lesion.

DISEASES AND DISORDERS CAUSED BY PARASITES OR INSECTS

Pediculosis — Infestation of nits or lice that invade certain areas of the body

There are three types of pediculi named for the area of the affected body part: **capitis** (head), **corporis** (body), and **pubis** (pubic). Symptoms include itching, redness in bite areas, and infestation in seams of clothing. Treatment includes removing all nits from the body, clothing, and linen; and the application of a pediculocide to the affected area.

Cimex (bedbugs) — Infestation of the insect on the body

Symptoms of bedbugs include hemorrhaging spots associated with the bite areas, and itching and burning of the affected areas, especially the legs. Treatment includes application of lotion containing methol or phenol to bites, administration of oral antihistamines for the itching, and the elimination of the insect in clothes and bed linens.

INTEGUMENTARY SYSTEM
UNIT I

SUPPLEMENT #2 — DIAGNOSTIC TESTS AND PROCEDURES USED IN THE TREATMENT OF ALLERGIES

(NOTE: There are many causes of allergies and various reactions to allergens. Skin reactions can occur from foods, chemicals, insects, or drug sensitivities. Treatment is based on the allergen involved and the extent of the reaction. Geographic location may be a big factor; and in some cases, the person with the allergy may have to relocate for improvement. Oklahoma and Texas are prime areas for allergic reactions to pollens and dust.)

Diagnostic Tests

A. Skin tests

   1. Scratch tests are given by applying the allergen to a small scratch in the skin

   2. Intradermal tests are given by injecting a minute amount of the allergen within the skin

   3. Patch tests are given by applying to the skin a small piece of gauze saturated with a solution containing the allergen

B. Elimination diets — Patients are taken off all foods for a short time, and are then given a few foods until allergic symptoms appear; foods are added to the diet one at a time until those causing sensitivity are determined

Treatment

A. Desensitization

   1. Small amounts of the antigen in gradually increasing dosages are administered once or twice a week for an extended period of time

   2. Injections may be given on a seasonal basis for allergies to certain pollens or plants

   (NOTE: Severe or fatal reactions to the desensitization can occur; patients should be monitored closely for reactions. Prescribed drugs may be ordered immediately [stat] if reaction occurs.)

B. Elimination diet — Foods causing allergies are entirely eliminated from patient's diet

INTEGUMENTARY SYSTEM
UNIT I

SUPPLEMENT #3 — CROSSWORD PUZZLE

Test your ability to remember terms associated with the integumentary system by using the clues below to complete the crossword puzzle on the following page. Refer to Sections I, III, and V of the Information Sheet if necessary.

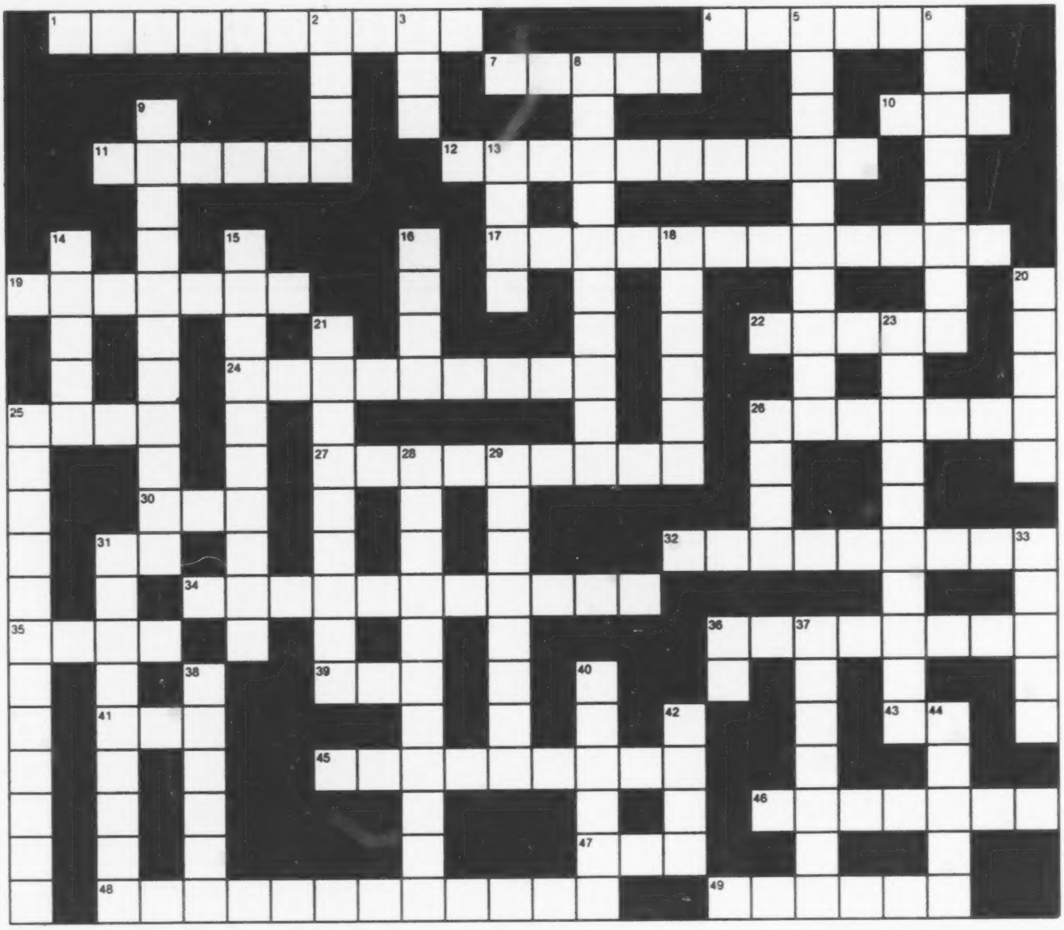
ACROSS

1. Glands in ears that secrete wax
4. Squamous results
7. Horny skin appendages
10. Prefix meaning **below**
11. Armpits
12. Outer layer of skin cells
17. Repair, regrowth, or restoration of a part
19. Give fluids to
22. Tender lesions of the skin
24. For example, hair, nails, sweat glands, etc.
25. Opposite of **open**
26. Study of health and observance of health rules
27. Lesion caused by local interference of circulation
30. Opposite of **on**
31. Abbreviation for **tin**
32. Pertaining to the skin
34. Study of the skin
35. Hollow cylinder such as a blood vessel
36. Small sac, cavity, or gland for excretion or secretion; a hair ____________
39. Health resort
41. Common skin injury
43. Abbreviation for licensed dietitian
45. Wheals or welts; hives
46. Designating local application
47. Organ of hearing
48. Sweat glands of the skin
49. To evaluate

DOWN

2. Prefix meaning **new**
3. Prefix meaning **single**
5. Able to walk
6. Covered with or consisting of scales
8. Skin
9. Removal of areas of skin by trauma, scraping, or scratching
13. Tiny opening in the skin
14. Substance contained in the dermis
15. Layered
16. Integument
18. Sensory fibers located in the dermis
20. Open sore or wound on the skin
21. Outermost layer of the skin
23. Pertaining to the epithelium
25. Under the skin
26. Warmth
28. Shortening or tightening of a muscle
29. Having to do with biology
31. Type of glands that secrete oil for tissue lubrication
33. Sudoriferous glands
36. Abbreviation for **iron**
37. Sores or ulcers of the skin
38. Felt an irritating sensation of the skin
40. Brown crusts that accumulate on the teeth and about lips from foul stomach or secretion of mouth
42. Skin appendage that keeps body warm and protects from foreign matter
44. Tubes, channels, or passages

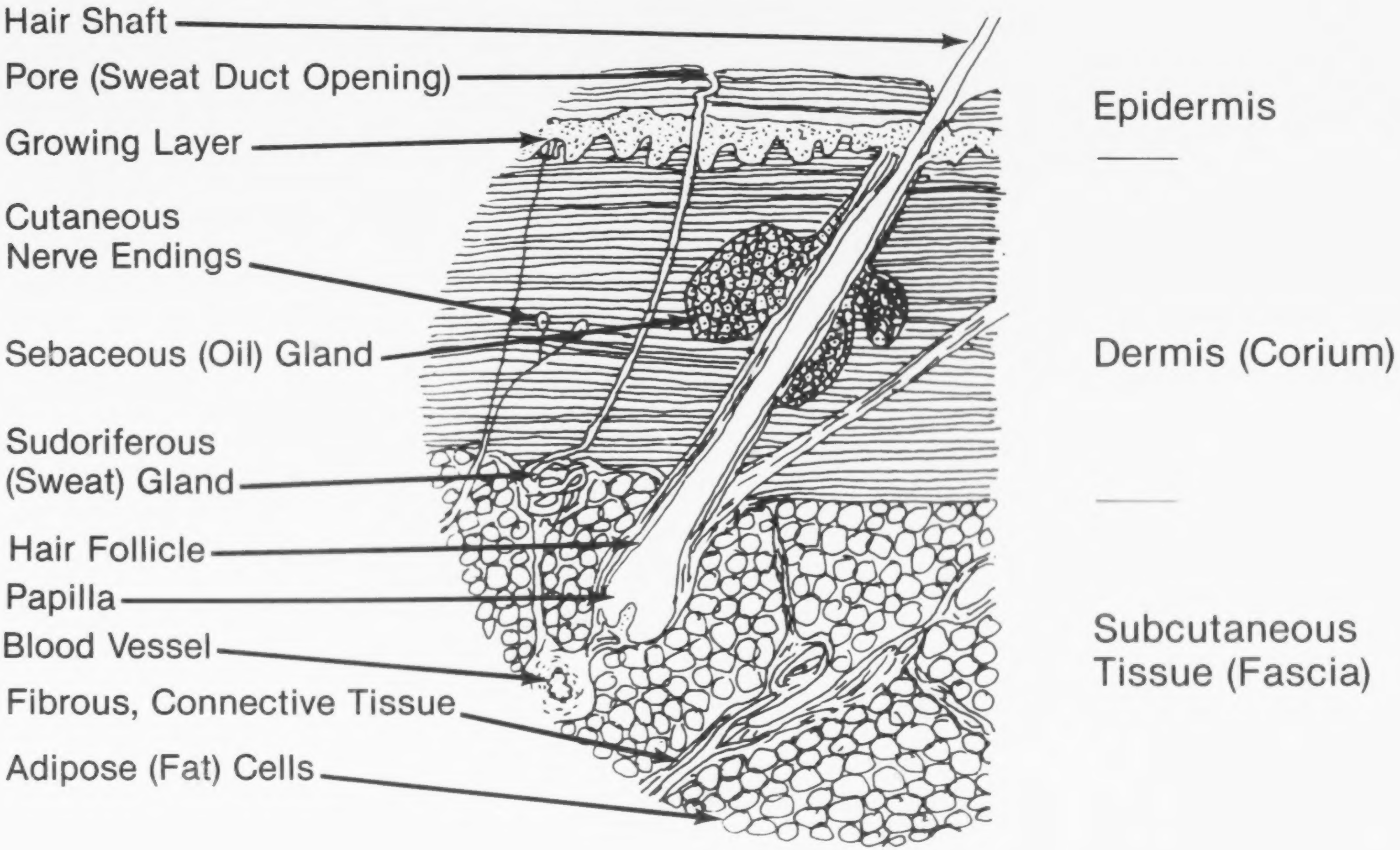
SUPPLEMENT #3



SUPPLEMENT #3

	1C	E	R	U	M	I	2N	O	3U	S						4S	C	5A	L	E	6S		
							O		N		7N	A	8I	L	S			M			Q		
			9E				V		I				N					B		10S	U	B	
		11A	X	I	L	L	A			12E	13P	I	T	H	E	L	I	U	M		A		
			C								O		E					L			M		
	14L		O		15S				16S		17R	E	G	E	18N	E	R	A	T	I	O	N	
19H	Y	D	R	A	T	E			K		E		U		E			T			U		20U
	M		I		R		21E		I				M		R		22S	O	R	23E	S		L
	P		A		24A	P	P	E	N	D	A	G	E		V			R		P			C
25S	H	U	T		T		I						N		E		26H	Y	G	I	E	N	E
U			I		I		27D	E	28C	U	29B	I	T	U	S		E			T			R
B			30O	F	F		E		O		I						A			H			
C		31S	N		I		R		N		O				32C	U	T	A	N	E	O	U	33S
U		E		34D	E	R	M	A	T	O	L	O	G	Y						L			W
35T	U	B	E		D		I		R		O					36F	O	37L	L	I	C	L	E
A		A		38I			39S	P	A		G		40S			E		E		A			A
N		41C	U	T					C		I		O		42H			S		43L	44D		T
E		E		C			45U	R	T	I	C	A	R	I	A			I			U		
O		O		H					U				D		I		46T	O	P	I	C	A	L
U		U		E					R				47E	A	R			N			T		
S		48S	U	D	O	R	I	F	E	R	O	U	S			49A	S	S	E	S	S		

The Skin



TM #1

551

552

AHC - 19-D

INTEGUMENTARY SYSTEM
UNIT I

ANSWERS TO ASSIGNMENT SHEET

Assignment Sheet #1

A. Hair shaft
B. Pore (sweat duct opening)
C. Growing layer
D. Cutaneous nerve endings
E. Sebaceous (oil) gland
F. Sudoriferous (sweat) gland
G. Hair follicle
H. Papilla
I. Blood vessel
J. Fibrous, connective tissue
K. Adipose (fat) cells
L. Subcutaneous tissue (fascia)
M. Dermis (corium)
N. Epidermis

INTEGUMENTARY SYSTEM
UNIT I

TEST

NAME ____ SCORE ________________

1. Match to their correct definitions terms associated with the integumentary system. Write the correct numbers in the blanks.

______a. Skin or covering, including sweat and oil glands

______b. Covered with or consisting of scales

______c. Outer layer of skin cells

______d. Repair, regrowth, or restoration of a part

______e. Pertaining to the skin

______f. Study of diseases of the skin

______g. Congenital coloration of a circumscribed area of the skin; birthmark or mole

______h. Circumscribed area of pathologically altered tissue

______i. Forming or containing pus

______j. Scaling off of dead tissue

______k. Oozing fluid that moves through vessel walls into tissues

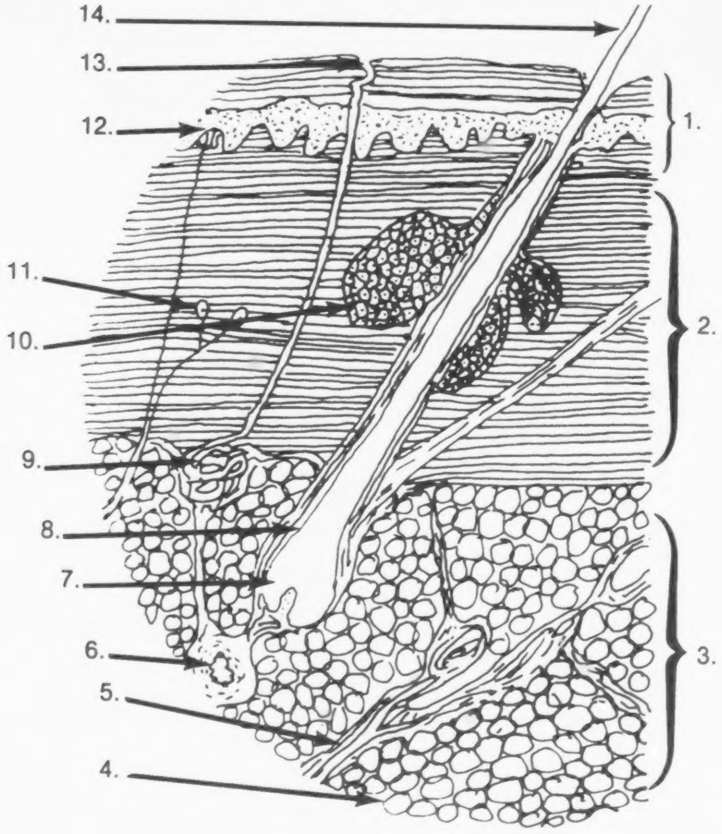
______l. Process of pus formation

1. Integument
2. Regeneration
3. Lesion
4. Exfoliation
5. Squamous
6. Cutaneous
7. Epithelium
8. Purulent
9. Suppuration
10. Dermatology
11. Exudate
12. Nevus (plural, nevi)

TEST

2. Identify the parts of the skin illustrated below. Write the correct numbers in the blanks.

______a. Epidermis	______h. Hair follicle
______b. Subcutaneous tissue (fascia)	______i. Adipose (fat) cells
______c. Sebaceous (oil) gland	______j. Papilla
______d. Cutaneous nerve endings	______k. Growing layer
______e. Hair shaft	______l. Blood vessel
______f. Dermis (corium)	______m. Fibrous, connective tissue
______g. Pore (sweat duct opening)	______n. Sudoriferous (sweat) gland



TEST

3. Distinguish among characteristics of layers of the skin. Write an "E" in the blanks before characteristics of epidermis, a "D" before characteristics of dermis, and an "S" in the blanks before characteristics of subcutaneous tissue.

______a. Consists of elastic and fibrous tissues and deposits of fat

______b. Lies directly below epidermis

______c. Covers outer area of body

______d. Contains pigment or melanin

______e. Contains blood vessels, nerves, lymph vessels, hair follicles, and sweat glands

______f. Consists of stratified (layered) squamous epithelial cells, and is the thickest on palms and soles

______g. Consists of fibrous connective tissue

______h. Attaches dermis to underlying structures

______i. Forms new cells in inner layer

4. Select correct functions for skin appendages. Write an "X" in the blank before each correct choice.

a. Hairs

______1) Enhance appearance

______2) Keep body warm and protect against invasion of foreign matter such as dust

______3) Secrete oil to lubricate and soften tissue

______4) Secrete wax

b. Nails

______1) Horny, cutaneous plates that protect delicate tissues

______2) Protect against invasion of foreign matter such as dust

______3) Secrete body salts, waste products, and water

______4) Secrete sebum

TEST

c. Sebaceous glands

_____1) Filter bacteria

_____2) Secrete body salts, waste products, and water

_____3) Secrete oil to lubricate and soften tissue

_____4) Secrete wax

d. Ceruminous glands

_____1) Secrete body salts, waste products, and water

_____2) Secrete electrolytes

_____3) Secrete oil to lubricate and soften tissue

_____4) Secrete wax

e. Sudoriferous or sweat glands

_____1) Horny, cutaneous plates that protect delicate tissues

_____2) Secrete body salts, waste products, and water

_____3) Secrete electrolytes

_____4) Secrete wax

5. Describe functions of the skin.

a. Sensation — ____

____

____

b. Protection — ____

____

____

c. Regulation of body temperature — ______________________________

____

____

TEST

d. Excretion of substances — ______________________________

____

____

e. Formation of vitamins — ______________________________

____

____

f. Maintenance of skin surface — ______________________________

____

____

6. Select from the following list characteristics of healthy skin. Write an "X" in the blank before each correct characteristic.

_____a. Smooth texture

_____b. Slightly wrinkly texture

_____c. Good elasticity

_____d. Consistency of texture

_____e. Abnormal odor

_____f. Dry, papery consistency

_____g. Consistency of color

_____h. No abnormal odor

_____i. Hydrated quality with no dryness or flakiness

7. List changes in the skin that take place during the aging process.

a. ______________________ d. ______________________

b. ______________________ e. ______________________

c. ______________________ f. ______________________

TEST

8. Match common skin abnormalities to their correct descriptions. Write the correct numbers in the blanks.

_____a. Redness of the skin

_____b. Hemorrhagic areas under skin that may appear in small areas (petechiae) or in larger areas

_____c. Paleness of skin, best assessed in nail beds, lips, and conjunctiva (lining of eyelids)

_____d. Yellowish pigment found on the skin and sclera (white portion of the eye)

_____e. Swelling caused by retention of fluid in tissues

_____f. Condition of spotting with patches of color

_____g. Bluish-gray color that is best assessed in the skin around the lips, cheeks, and ear lobes

_____h. Infectious fungal skin eruption characterized by the formation of vesicles with cracking and scaling

_____i. Lesion, usually over bony prominence, caused by local interference of circulation

_____j. Tiny purple or red spots that appear on the skin as a result of minute capillary hemorrhage within the dermal or subcutaneous layers

_____k. Inflammation of cellular or connective tissues

_____l. Wheals or welts that itch intensely and usually have white elevated centers; hives

_____m. Skin abrasion caused by trauma, scraping, or scratching

_____n. Small flat blemish or discoloration that is flush with the skin surface

_____o. Overgrowth of scar tissue on the skin

1. Jaundice
2. Pallor
3. Cyanosis
4. Mottling
5. Edema
6. Erythema
7. Ecchymoses
8. Petechiae
9. Decubitus ulcer
10. Cellulitis
11. Excoriation
12. Urticaria
13. Keloid
14. Tinea
15. Macule

TEST

9. Describe education and duties of one health occupation related to the integumentary system.

INTEGUMENTARY SYSTEM
UNIT I

ANSWERS TO TEST

1. a. 1
   b. 5
   c. 7
   d. 2
   e. 6
   f. 10
   g. 12
   h. 3
   i. 8
   j. 4
   k. 11
   l. 9

2. a. 1
   b. 3
   c. 10
   d. 11
   e. 14
   f. 2
   g. 13
   h. 8
   i. 4
   j. 7
   k. 12
   l. 6
   m. 5
   n. 9

3. a. S
   b. D
   c. E
   d. E
   e. D
   f. E
   g. D
   h. S
   i. E

4. a. 2
   b. 1
   c. 3
   d. 4
   e. 2

5. Description should include the following

   a. Sensation — Acts as a warning system by receiving and transferring to the brain sensations of pain, temperature, and pressure

   b. Protection

      1) Forms an elastic covering that protects against external environment
      2) Prevents excessive loss of fluids and electrolytes
      3) Prevents invasion of microorganisms
      4) Repels water

ANSWERS TO TEST

c. Regulation of body temperature
    1) Fatty tissue acts as insulation to prevent heat loss
    2) Cools the skin through evaporation and perspiration
    3) Can increase or decrease heat loss through adjustment of blood vessel size

d. Excretion of substances
    1) Excretes water through the pores
    2) Releases salt
    3) Eliminates waste products through integumentary system

e. Formation of vitamins — Forms vitamin D when exposed to sun or ultraviolet light

f. Maintenance of skin surface
    1) Secretes oil to maintain elasticity
    2) Provides a water-resistant base

6. a, c, g, h, i

7. a. Becomes drier
    b. Is prone to wrinkling
    c. May become thin and translucent
    d. Is less elastic
    e. Is very susceptible to irritations and bruises easily
    f. Forms liver spots in areas frequently exposed to sun

8. a. 6
    b. 7
    c. 2
    d. 1
    e. 5
    f. 4
    g. 3
    h. 14
    i. 9
    j. 8
    k. 10
    l. 12
    m. 11
    n. 15
    o. 13

9. Evaluated to the satisfaction of the instructor

SKELETAL SYSTEM
UNIT II

SUGGESTED ACTIVITIES

I. Unit contents

  A. Objective sheet

  B. Suggested activities

  C. Supplements

    1. Supplement #1 — Skeletal System Crossword Puzzles

    2. Supplement #2 — Common Diseases and Disorders of the Skeletal System

    3. Supplement #3 — Structures of a Long Bone

  D. Transparency masters

    1. TM #1 — Axial Skeleton

    2. TM #2 — Appendicular Skeleton

    3. TM #3 — Bones of the Cranium

    4. TM #4 — Bones of the Face

    5. TM #5 — Bones of the Ear

    6. TM #6 — The Vertebral Column

    7. TM #7 — Third Lumbar Vertebra

    8. TM #8 — The Ribs and Sternum

    9. TM #9 — Ball and Socket Joint

    10. TM #10 — Hinge Joint

    11. TM #11 — Pivot Joint

  E. Information sheet

  F. Assignment sheets

    1. Assignment Sheet #1 — Classify Bones According to Type

    2. Assignment Sheet #2 — Label the Bones of the Skull

    3. Assignment Sheet #3 — Label Regions and Bones of the Vertebral Column

SUGGESTED ACTIVITIES

4. Assignment Sheet #4 — Label the Bones of the Appendicular Skeleton

5. Assignment Sheet #5 — Answer Study Questions Related to the Skeletal System

G. Answers to assignment sheets

H. Test

I. Answers to test

II. Instructor's guide

A. Review unit and plan presentation.

B. Order or obtain materials to supplement unit.

1. Films

a. *Our Wonderful Body: How It Moves*, 11 minutes, 1968. Available from Coronet Films, 65 E. South Water Street, Chicago, Illinois 60601. A skeleton helps show a young boy how his body moves. A simple model of his arm shows the combined action of muscles, bones and joints. He learns why he cannot do some of the things older children can and ways to keep bones, muscles, and nerves healthy.

b. *I Am Joe's Spine*, 26 minutes, 1973. Available from Pyramid Films, P.O. Box 1048, Santa Monica, California 90406. Live-action situations that lead to trouble with the spine are combined with three-dimensional animation to give an understanding of the structural work the spine can perform.

(NOTE: These films are available to Oklahoma teachers on a free-loan basis. Oklahoma teachers may order from the State Department of Vocational and Technical Education, Film Library, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364. Out-of-state teachers must order from the addresses listed above.)

2. Computer software

(NOTE: The following programs can be ordered from Teachware, P.O. Box 94365, Oklahoma City, Oklahoma 73143, telephone [405] 794-3748.)

a. *The Body In Focus*. CBS Software, available for Apple II, IBM and Commodore. A self-paced exploration into human anatomy improves understanding of systems and organs. Body close-ups allow students to explore the head, arm, and torso layer by layer. This very good overview of the human body covers the integumentary, muscular, digestive, nervous, skeletal, respiratory, circulatory, and endocrine systems.

SUGGESTED ACTIVITIES

b. *The Body Transparent*. Designware software, available for Apple, IBM and Commodore. Students can learn the names of organs and bones. Program includes several varying levels of difficulty where the student can move bones and organs to the correct locations.

C. Introduce unit.

- Emphasize health careers related to the skeletal system.
- Discuss the areas that relate to the skeletal system.

EXAMPLES: Trauma units, home health, rehabilitation centers, orthotics/prosthetics, orthopedic units, physical therapy, occupational therapy, etc.

- Have a class discussion about the institutions and businesses in your area that deal with the skeletal system.

D. Discuss unit and specific objectives.

E. Discuss information sheet and assignment sheets.

1. Use Information Sheet, Section I, to discuss terms and definitions associated with the skeletal system.

    - Relate the terms and definitions to your students' areas of interest.

    EXAMPLES: Medical records use these terms. Vet assistants, nurse assistants, physical therapists, and medical assistants will all need to be familiar with these terms so as to know what types of observations and methods of treatments will be needed.

    - Use a skeleton to illustrate the terms as you discuss them.
    - Stress the need for knowledge of these terms, as they will be used throughout the unit.

2. Use Information Sheet, Section II, to discuss functions of the skeletal system.

    - Point out that every organ except the kidney is protected by bone; the kidney is protected by a thick layer of epinephric fat.
    - Discuss the effects of muscle contractures and fusion of joints on the ability to move.

SUGGESTED ACTIVITIES

- Explain briefly the functions of red blood cells, white blood cells, and platelets. Relate the production of blood cells in the bone marrow to bone marrow aspiration.

- Explain that the calcium level in the blood takes precedence over the bones; and if the blood level is low, calcium will be drawn from the bones, making them weaker and more easily fractured.

3. Use Information Sheet, Section III, to discuss ways of maintaining the skeletal system.

   - Demonstrate good posture.

   - Explain the effects poorly fitting shoes will have; reinforce that fashion statements in footwear should not be at the expense of health.

   - Stress good nutrition; review the four food groups and the daily servings of each.

   - Review the benefits of exercise on a regular basis.

4. Use Information Sheet, Sections IV and V, to discuss the composition and types of bones.

   - When discussing the long bones, give students Supplement #3 — Structures of a Long Bone.

   - Point out each bone on a skeleton as you discuss it.

   - After completion of your discussion, select random long bones to have the students identify on the skeleton and state what type they are.

5. Use Information Sheet, Section VI, to discuss the two parts of the human skeleton.

   - Show Transparency #1, The Axial Skeleton, when discussing this section.

   - Have the students tell you what anterior and posterior mean.

   - Show Transparency #2 to illustrate the appendicular skeleton.

   - Have the students define and give examples of appendages.

6. Use Information Sheet, Section VII, to discuss bones of the skull.

   - Show Transparency #3 to point out bones of the cranium; also use a skeleton if you have one available.

SUGGESTED ACTIVITIES

- Discuss suture lines on the skull. Ask the students if any of them have seen an infant just after birth with a misshapen head, then tell them that the suture lines on a newborn are not fused as in an older person, and the shape is due to overlap of cranial bones during the delivery process.
- Show Transparency #4 to illustrate the bones of the face; point out those bones on skeleton.
- Show Transparency #5 to illustrate bones of ear.

7. Use Information Sheet, Section VIII, to discuss regions of the vertebral column.
    - Show Transparency #6 and skeleton to show the regions of the vertebral column. Point out on the transparency where a slipped disc would occur, and tell what it is.
    - Show Transparency #7 to illustrate an individual vertebra.
    - If your class has a large number of nurse assistants/physical therapist assistants, explain about traction; and point out the areas on the spinal column where it may be applied.
    - Point out the lumbar region, and explain that this is the area where most back injuries occur.
8. Use Information Sheet, Section IX, to discuss characteristics of ribs and the sternum.
    - Show Transparency #8 to illustrate your discussion.
    - Ask the students what organs the ribs protect.
    - Review the role the sternum and the xiphoid process play in CPR.
9. Use Information Sheet, Section X, to discuss bones of the appendicular skeleton.
    - Show Transparency #2 to illustrate the bones of the appendicular skeleton.
    - After the discussion, break the students into teams. Have each team identify the position of the bones on the skeleton, state which type of bone it is, and how many bones there are.
10. Use Information Sheet, Sections XI and XII, to discuss functions of the articular system and articular classifications.
    - Discuss the functions of the articular system.
    - Review the types of articular classifications, and point out the different types on the skeleton.

SUGGESTED ACTIVITIES

11. Use Information Sheet, Section XIII, to discuss types of movable joints.

    - Show Transparencies #9-#11 to illustrate the types of movable joints.
    - As you discuss the joints, have the students move each joint.
    - Point out how difficult certain movements, movements we all take for granted, would be without the use of these joints. Ask the students how they would eat if they had no movement in their elbow, etc.
    - Move the joints on the skeleton as you discuss the joints.
    - Point out everyday objects that illustrate concave, convex, and elliptical shapes.

      EXAMPLES: Globe, bowl, cup and saucer

    - Point out a condyle and the elliptical cavity on bones in the skeleton.

12. Use Information Sheet, Section XIV, to discuss the types of articular movement.

    - Have the students perform simple movements. Ask them to identify the movement, the joint, and the type of joint.
    - Have the students perform more complex movements that use more than one joint. Ask them to identify the joints used, their types, and the types of movements.
    - Ask the students while they are going to their next class to thin[illegible]bout all the movements they perform in a short period of time.

13. Use Information Sheet, Section XV, to discuss occupations related to the skeletal system.

    - Explain that this list is not comprehensive, and have the students come up with other occupations that could fit in this category.

      EXAMPLES: Radiology, rehabilitation

    - Invite a representative from one of the occupations to come to class as a guest speaker to describe his or her job functions.
    - Have students complete Assignment Sheets #1-#5 for practice and reinforcement of the material in the information sheet.
    - Give the students Supplement #1, the crossword puzzle, for completion.
    - Share Supplement #2 with the class.

SUGGESTED ACTIVITIES

F. Review material and give test.

G. Critique test and discuss with the class.

H. Reteach and retest if necessary.

I. Complete appropriate section of students' competency profiles.

III. Unit references

A. Boyles, Marcia V., Margaret K. Morgan, and Mary H. McCaulley. *The Health Professions*. Philadelphia: W.B. Saunders Company, 1982.

B. Kellum, Mary. *Anatomy and Physiology*. Stillwater, Oklahoma: Mid-America Vocational Consortium, Inc., 1984.

C. Rogers, Helen V. and Ann Benson. *Practical Nursing: Volume I*, revised by Jamee Reid Sloan. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1981.

D. Sloan, Jamee Reid. *Health Service Careers*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1979.

SKELETAL SYSTEM
UNIT II

SUPPLEMENT #1 — SKELETAL SYSTEM CROSSWORD PUZZLES

See how well you recall terms associated with the skeletal system by working the following crossword puzzles.

PUZZLE 1

ACROSS

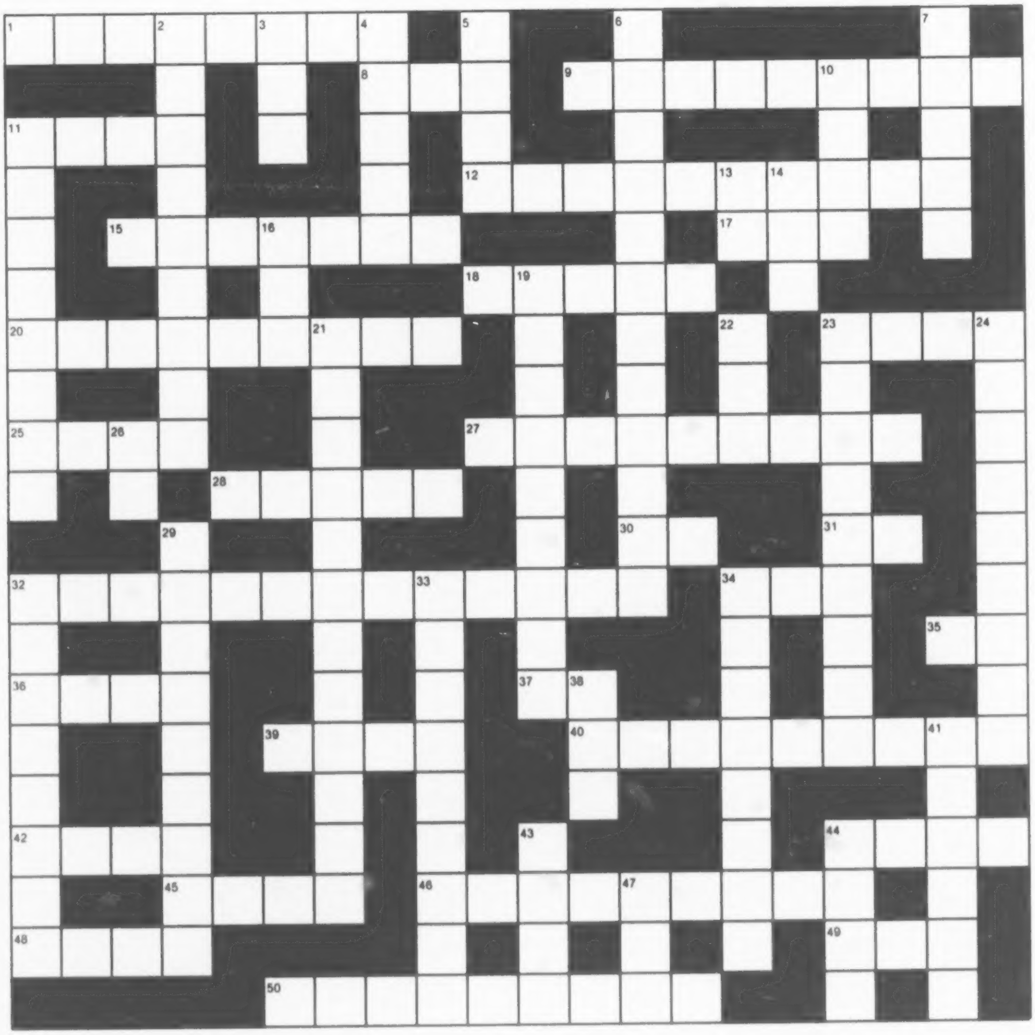
1. Small nodular bone embedded in a tendon or joint capsule
8. Prefix meaning *upon* or *after*
9. Bones that are not long, short, or flat
11. Noisy
12. Moving the bones of the forearm so that the radius and ulna are parallel
15. Shoulder blade
17. Large snake
18. Thighbone
20. Upper jawbone
23. Support
25. Midday
27. Bones of the spine
28. Prefix meaning *gland*
30. Bone
31. Prefix meaning *toward*
32. Moving the bone so that the end of it describes a circle and the side describes a cone
34. Sol
35. Prefix meaning *two*
36. Prefix meaning *against*
37. Opposite of *yes*
39. Sculpture of a head
40. Moving the sole of the foot inward at the ankle joint
42. Outer wear
44. Flying toy
45. Prefix meaning *chamber*
46. Moving the bone away from the midline
48. Wicked
49. Country hotel
50. Science dealing with the study of bones

DOWN

2. Moving the bone toward the midline
3. Prefix meaning *ear*
4. Satan
5. There are 12 pairs of these
6. Connection of bones
7. Poison
10. Suffix meaning *urine*
11. Band of fibrous connective tissue connecting bones
13. Prefix meaning *away from*
14. Small child
16. Chum
19. Straightening or increasing the angle between two bones
21. Pertaining to a limb or appendage
22. Ambulatory (abbr)
23. Miniature long bones in fingers and toes
24. Moving the bones of the forearm so that the radius and ulna are not parallel
26. Prefix meaning *eye*
29. Bone in posterior part of cranium
32. Collarbone
33. Dense connective tissue consisting of cells embedded in a matrix that is firm and compact
34. Bone that is crosswise through midportion of cranium
38. Suffix meaning *resembling*
41. Trip
43. Hero
44. Make a sweater
47. Tooth on rim of a gear

SUPPLEMENT #1

PUZZLE 1



SUPPLEMENT #1

PUZZLE 2

ACROSS

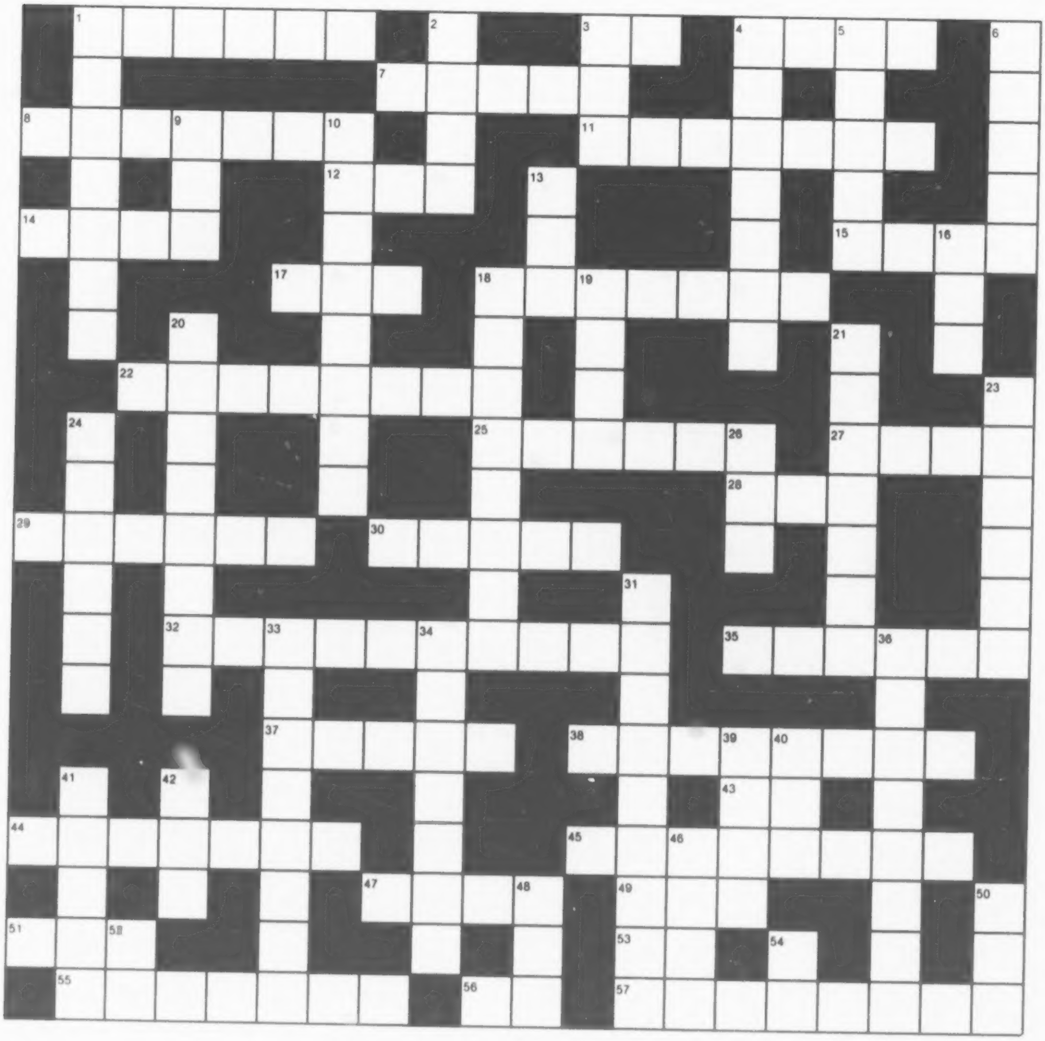
1. Long, slender bone on lateral side of lower leg
3. Before meals (abbr)
4. Meaning of prefix *cap-*
7. Point of junction between two bones
8. Bony prominence that resembles part of a knuckle
11. Bone that is posterior to nasal bones and anterior to sphenoid
12. Animal doctor
14. Remain
15. Type of bone that has greater length than width
17. When necessary (abbr)
18. Breastbone
22. Lower jawbone
25. Region of the vertebral column that functions as the workhorse of the body
27. Pale green or white bean
28. Sick
29. Long bone on thumb side of forearm
30. Suffix meaning *birth*
32. Science dealing with the study of joints
35. Pertaining to the ribs
37. Bacteria grow well in a warm, ____________ atmosphere
38. Moving the bone around a central axis
43. Regarding (abbr)
44. Bending or decreasing the angle between two bones
45. Bone on top of cranium behind frontal bone
47. Long bone on little-finger side of forearm
49. Three times per day (abbr)
51. Suffix meaning *tumor*
53. I am, he ____________
55. Kneecap
56. Operating room (abbr)
57. Region of the spine with 7 vertebrae

DOWN

1. Bone in forehead
2. Prefix meaning *after*
3. Took nourishment
4. Long bone in upper arm
5. Pertaining to a line running through the center of a body
6. What you might use to support an injured arm
9. 24 hours
10. Moving the sole of the foot outward at the ankle joint
13. Suffix meaning *specialist*
16. Prefix meaning *new*
18. System that deals with bones and joints
19. Test
20. Bone that is posterior and lateral to nasal bones
21. Bone in ear shaped like a hammer
23. Region of spine with one wedge-shaped bone
24. Bone in ear shaped like a stirrup
26. Tear
31. Cheekbone
33. Lower side of cranium
34. Any small bone
36. Region of spine with 12 vertebrae
39. Dry
40. Golf peg
41. Slouch
42. Prefix meaning *outside*
46. Stand up
48. Prefix meaning *ear*
50. Prefix meaning *abnormal*
52. Alcoholics Anonymous (abbr)
54. Roman 4

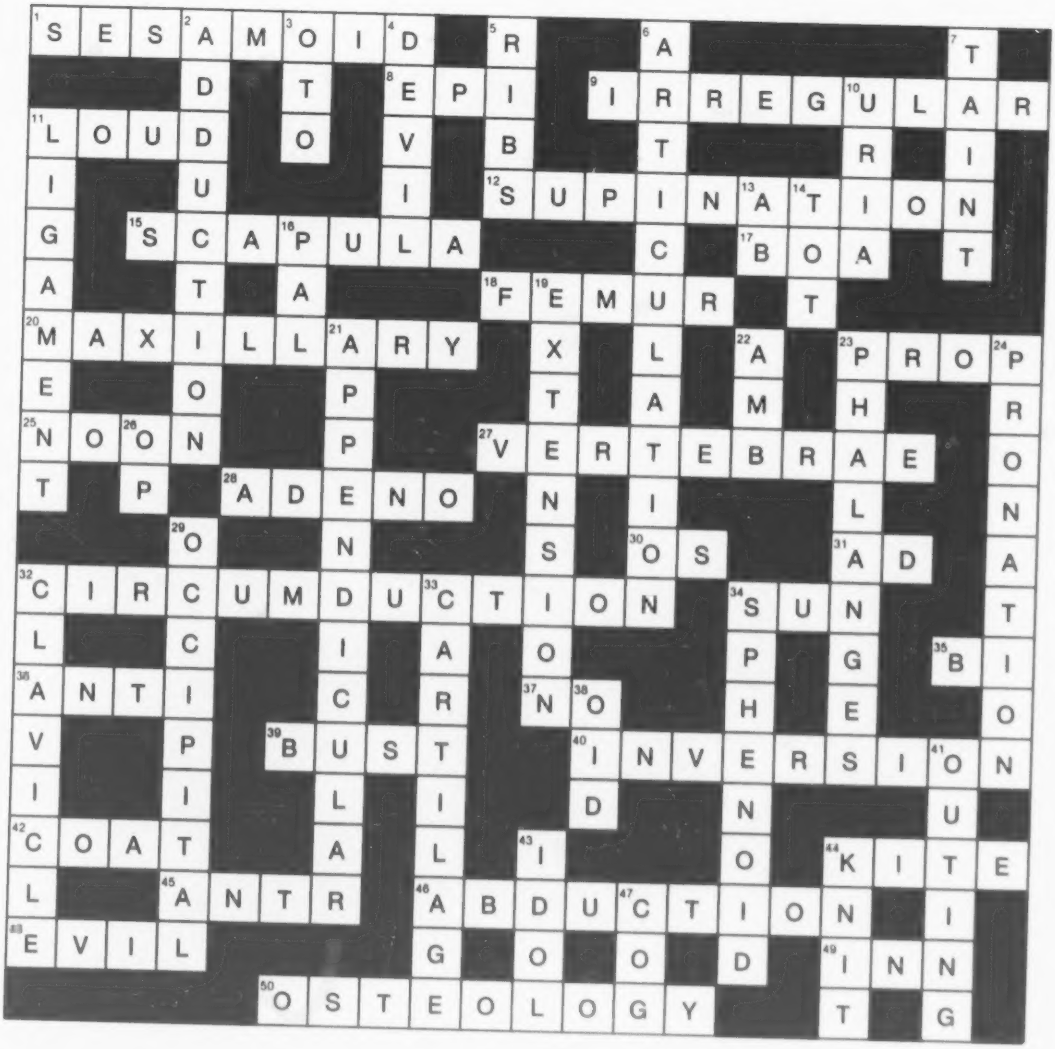
SUPPLEMENT #1

PUZZLE 2



SUPPLEMENT #1

Puzzle 1



SUPPLEMENT #1

Puzzle 2

	1 F	I	B	U	L	A		2 P			3 A	C		4 H	E	5 A	D		6 S
	R						7 J	O	I	N	T			U		X			L
8 C	O	N	9 D	Y	L	10 E		S			11 E	T	H	M	O	I	D		I
	N		A			12 V	E	T		13 I				E		A			N
14 S	T	A	Y			E				S				R		15 L	O	16 N	G
	A				17 P	R	N		18 S	T	19 E	R	N	U	M			E	
	L		20 L			S			K		X			S		21 M		O	
		22 M	A	N	D	I	B	L	E		A					A			23 S
	24 S		C			O			25 L	U	M	B	A	26 R		27 L	I	M	A
	T		R			N			E					28 I	L	L			C
29 R	A	D	I	U	S		30 N	A	T	A	L			P		E			R
	P		M						A			31 Z				U			A
	E		32 A	R	33 T	H	R	34 O	L	O	G	Y		35 C	O	S	36 T	A	L
	S		L		E			S				G					H		
					37 M	O	I	S	T		38 R	O	T	39 A	40 T	I	O	N	
	41 S		42 E		P			I				M		43 R	E		R		
44 F	L	E	X	I	O	N		C			45 P	A	46 R	I	E	T	A	L	
	U		O		R		47 U	L	N	48 A		49 T	I	D			C		50 M
51 O	M	52 A			A			E		U		53 I	S		54 I		I		A
	55 P	A	T	E	L	L	A		56 O	R		57 C	E	R	V	I	C	A	L

SKELETAL SYSTEM
UNIT II

SUPPLEMENT #2 — COMMON DISEASES AND DISORDERS OF THE SKELETAL SYSTEM

Type	Disease/Disorder	Description
Congenital	Achondroplasia	A disorder of cartilage formation that leads to dwarfism
	Osteogenesis Imperfecta	Abnormally brittle bones that fracture easily
Degenerative	Osteoarthritis	Usually starts in the elderly. Joint pain and stiffness after activity. Treatment: Rest and medication for pain
Infectious	Arthritis	Inflammatory condition involving the joints, causing pain and stiffness
	Osteomyelitis	Inflammation of the bone marrow due to a pyogenic infection. It may result in bone destruction, and stiffening of the joints if the infection spreads to the joints
	Rheumatoid Arthritis	Chronic systemic disease with inflammatory changes. Causes inflammation, pain, and stiffness. Eventually the joints will become deformed
	Tenosynovitis	Infection of a tendon and its sheath
	Tuberculosis of the bone	Infection of bone by the tubercule bacillus
Metabolic	Gout	Hereditary form of arthritis. Uric acid appears in excessive quantities in the blood and may be deposited in the joints. During an attack, severe inflammation and pain in a joint, often in the big toe. Treatment: Medications

SUPPLEMENT #2

Type	Disease/Disorder	Description
Metabolic (Continued)	Osteoporosis	Usually affects the elderly. More bone cells are destroyed than are being manufactured to replace them. The bones become weak and brittle and fracture easily. Treatment: Give supplements of calcium and vitamin D
	Rheumatoid Arthritis	Chronic systemic progressive disease with inflammation, pain, and stiffness of joints, leading to deformity. Onset usually between 20 to 40 yrs. Treatment: Treat symptoms to maintain activity for as long as possible
	Still's Disease	Rheumatoid Arthritis in children
Neoplastic	Chondroma	Tumorlike growth of cartilage cells
	Chondrosarcoma	Malignant tumor in the cartilage
	Osteogenic Sarcoma	Malignant tumor in the bone
	Osteoma	Tumor composed of bone tissue, can be benign or malignant
Nutritional	Rickets	Deficiency of calcium and/or vitamin D. Causes softening of the bone which leads to deformity. Treatment: Give needed nutrients
Traumatic	Depressed	Fracture of the skull in which a fragment is depressed
	Dislocation	Bones of the joint move out of their proper place; occurs most often in the shoulder or the hip. Treatment: Has to be reduced, may need a bandage to help rest the area. If it occurs several times, surgical repair may be done.
	Fracture	Any kind of broken bone
	Simple	Broken bone does not penetrate the skin

SUPPLEMENT #2

Type	Disease/Disorder	Description
Traumatic (Continued)	Fracture (Continued)	
	Compound	One or more of the broken bones does penetrate the skin; also called an *open fracture*
	Greenstick	One side of the bone is broken, but bone is not broken all the way through. Seen in children.
	Comminuted	Bone is splintered or crushed
	Impacted	One piece of bone is driven into the rest of the bone
	Incomplete	Does not involve the entire cross section of the bone
	Spiral	Fracture makes a spiral-shaped pattern in the bone
	Sprain	Ligaments around a joint are torn but not severed. Causes swelling and pain. Treatment: Apply heat or cold and apply a bandage
	Torn cartilage	Most often in knee joint. Cartilage is damaged. Treatment: Rest joint; but if condition persists, surgical repair may be necessary.

SKELETAL SYSTEM
UNIT II

SUPPLEMENT #3 — STRUCTURES OF A LONG BONE

Articular cartilage — Thin layer of cartilage covering each epiphysis; acts as a cushion over the ends of bones where they come together to form a joint

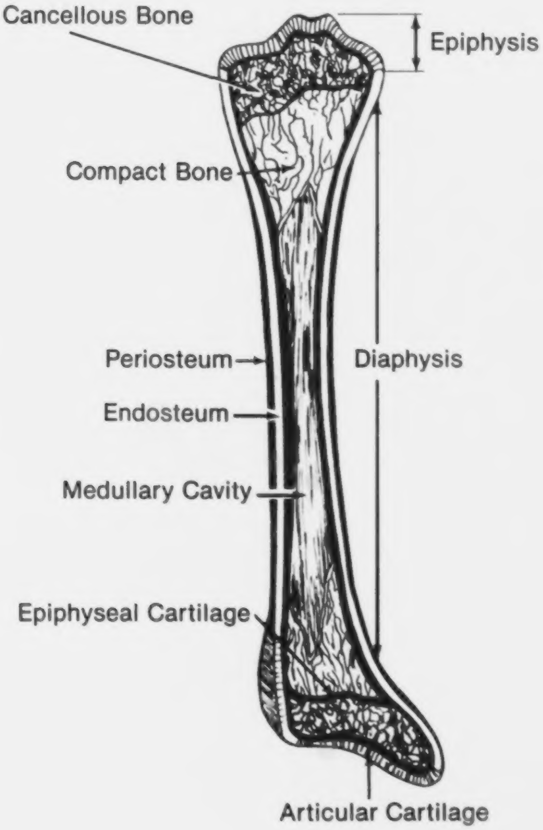
Diaphysis — Shaft; hollow tube made of hard compact bone; a rigid and strong structure

Endosteum — Tissue that lines the medullary cavity of a bone

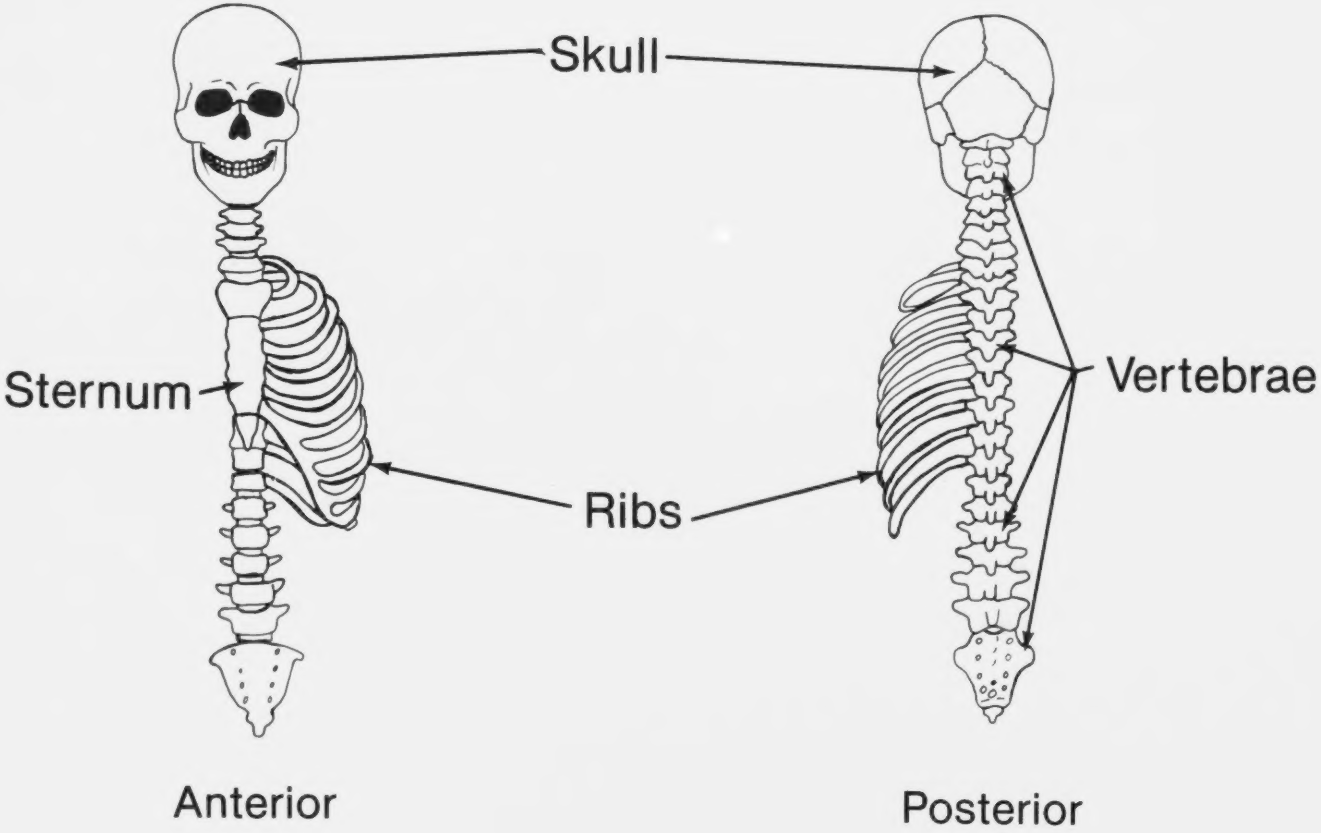
Epiphysis — End of the bone; composed of a spongy bone with spaces filled in with red bone marrow

Medullary cavity — Hollow area inside the diaphysis of a bone; contains soft yellow bone marrow

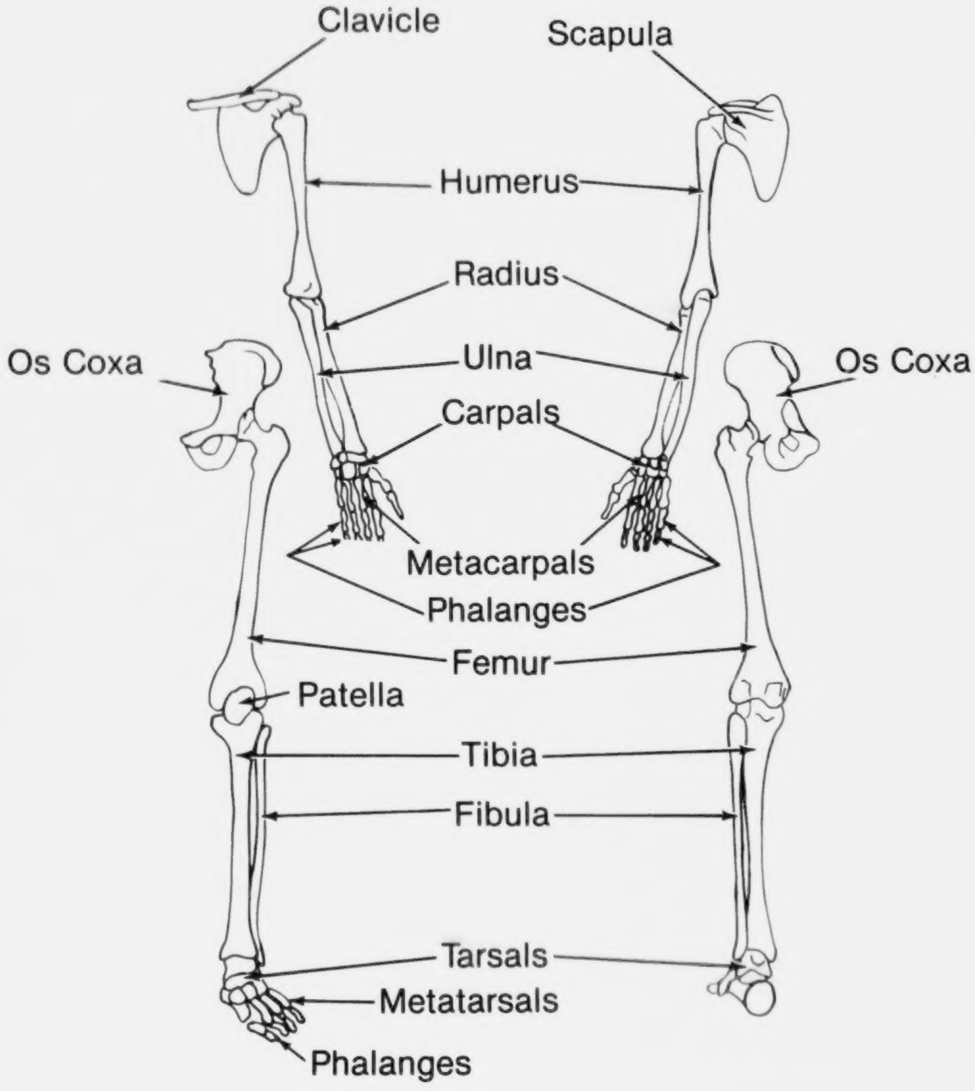
Periosteum — Strong fibrous membrane that covers a long bone except where it is covered by articular cartilage



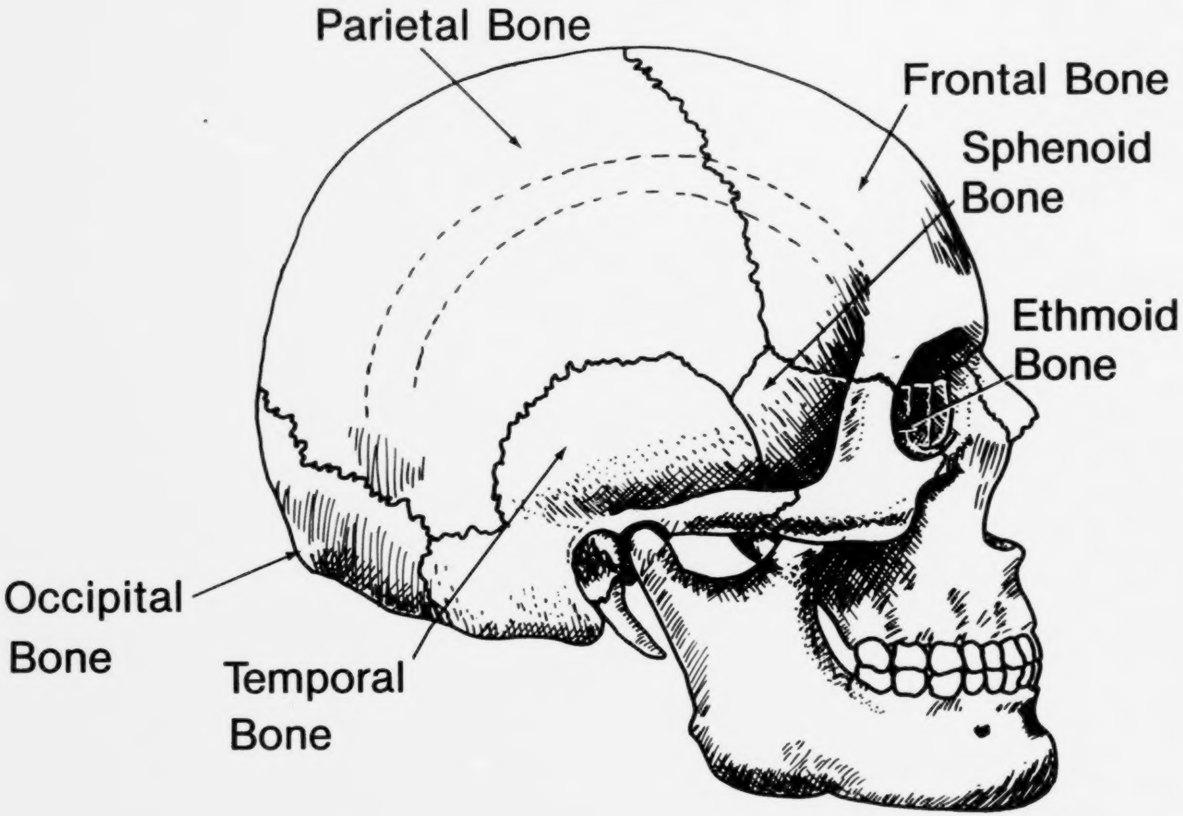
Axial Skeleton



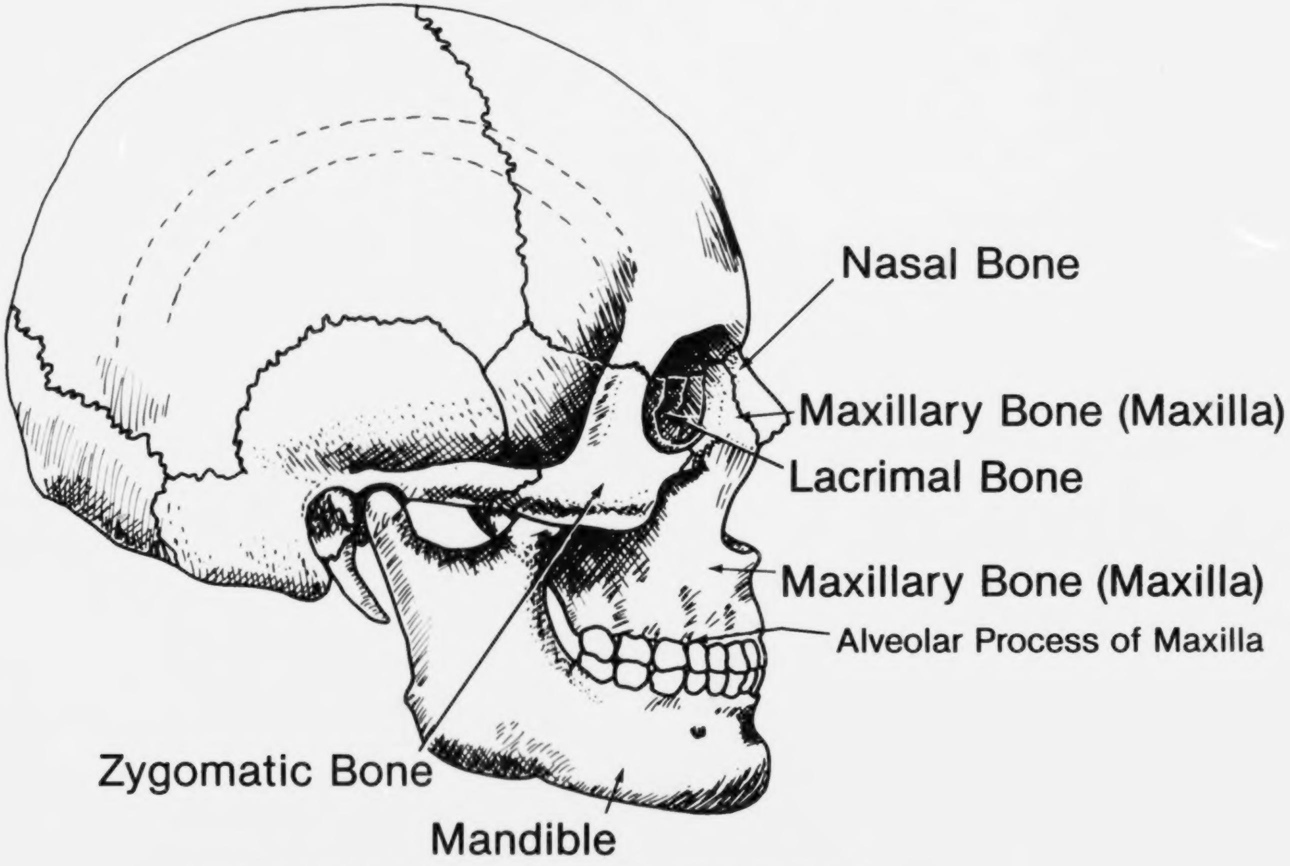
Appendicular Skeleton



Bones of the Cranium

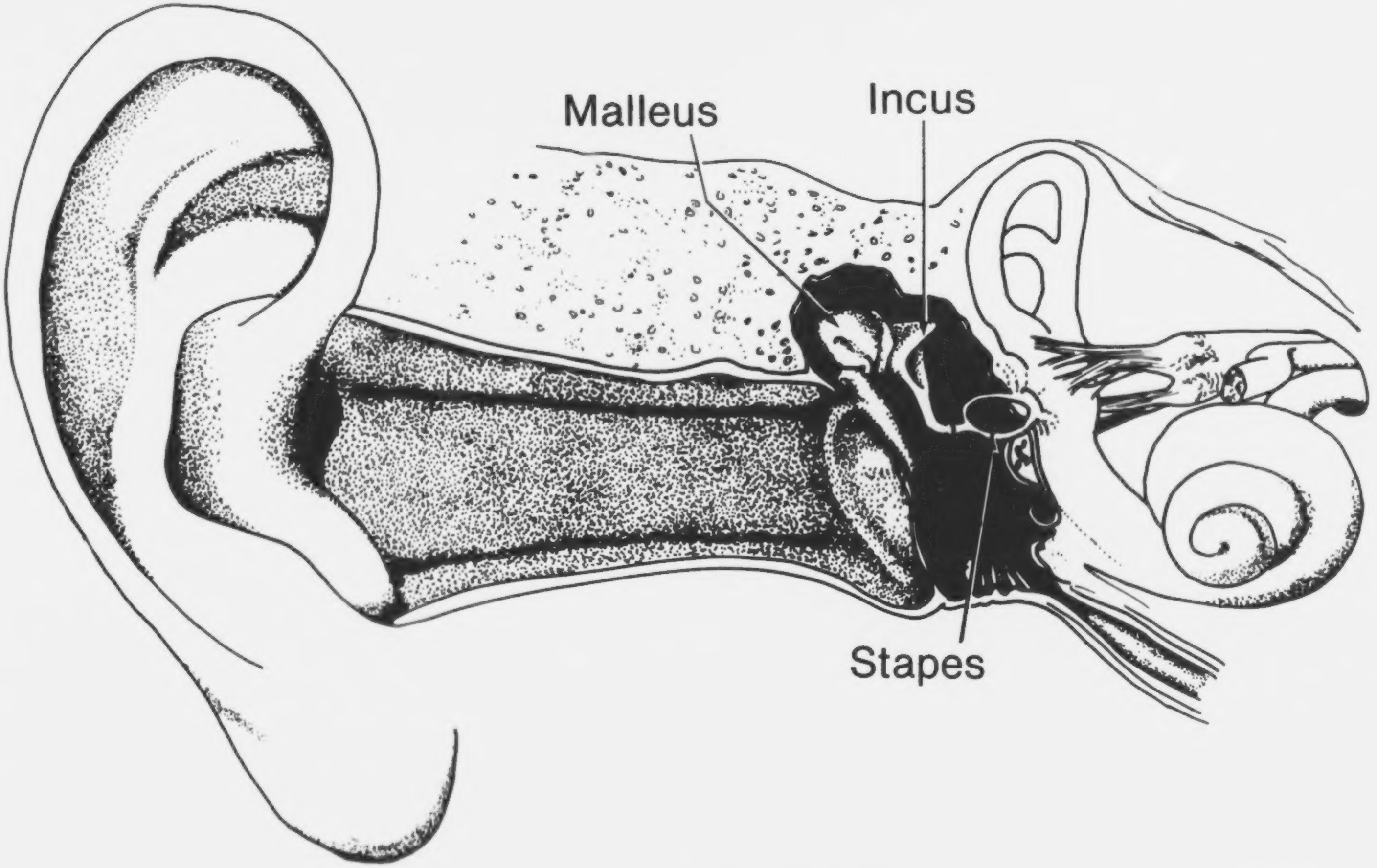


Bones of the Face



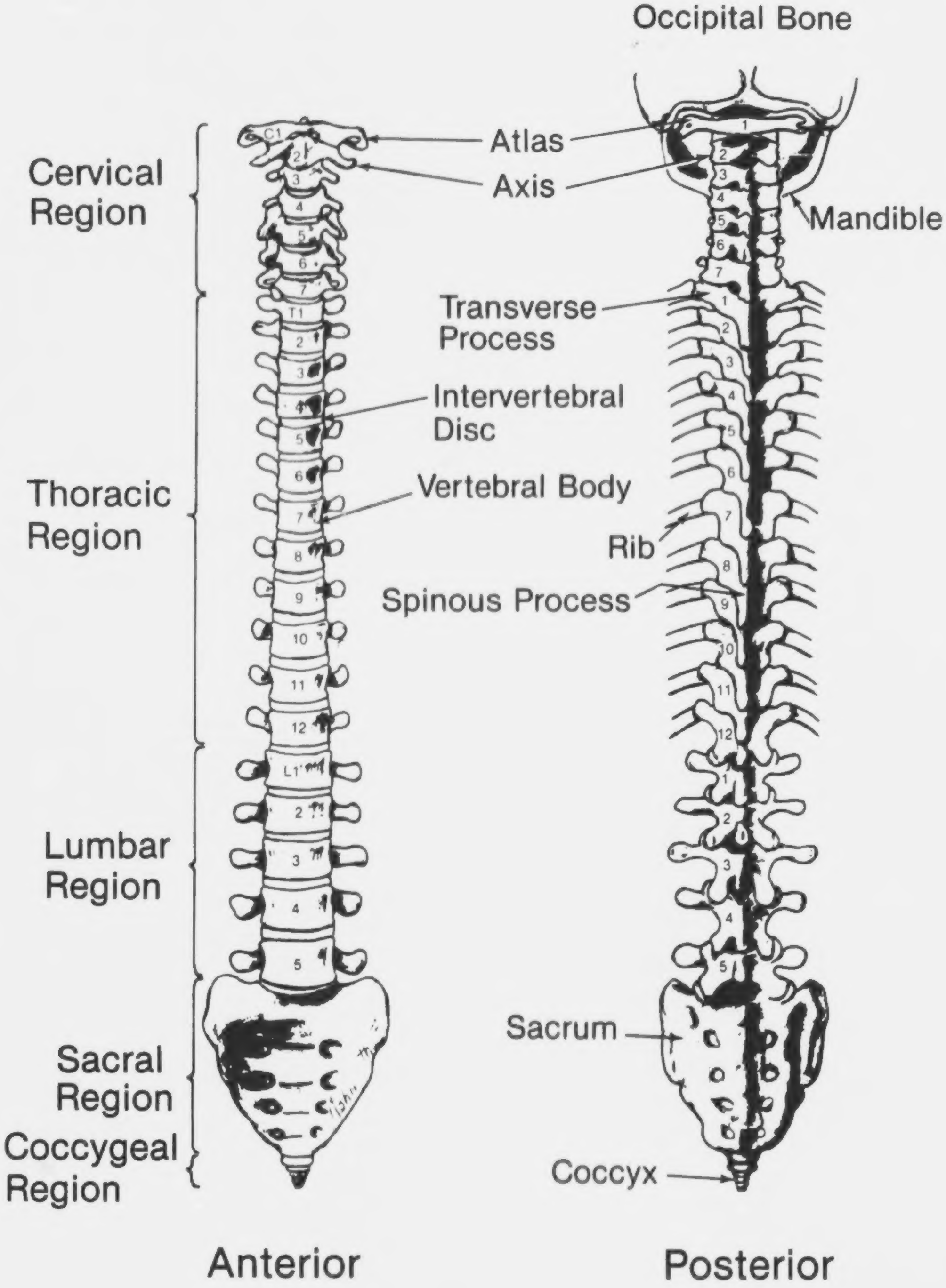
(NOTE: Not all facial bones are shown here.)

Bones of the Ear

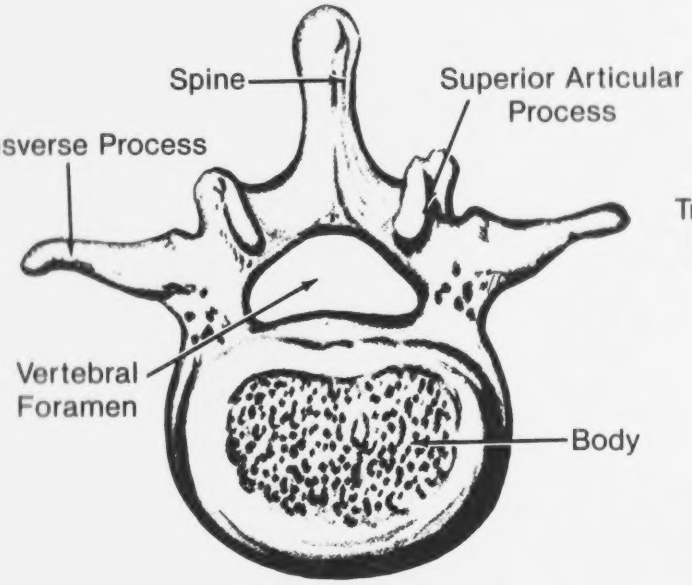


TM #5

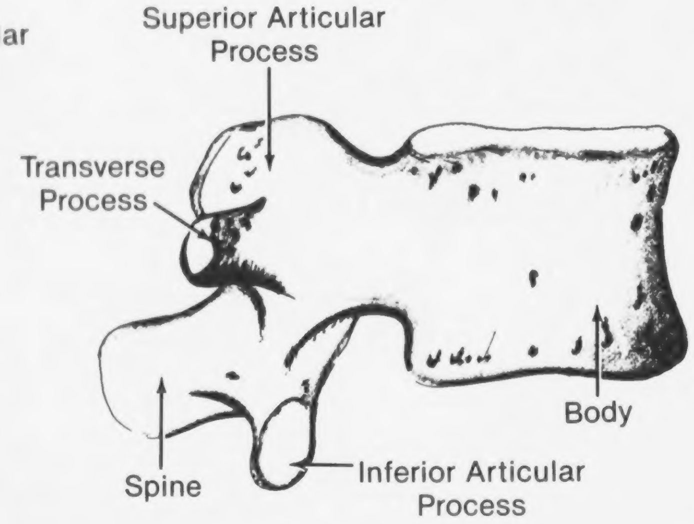
The Vertebral Column



Third Lumbar Vertebra



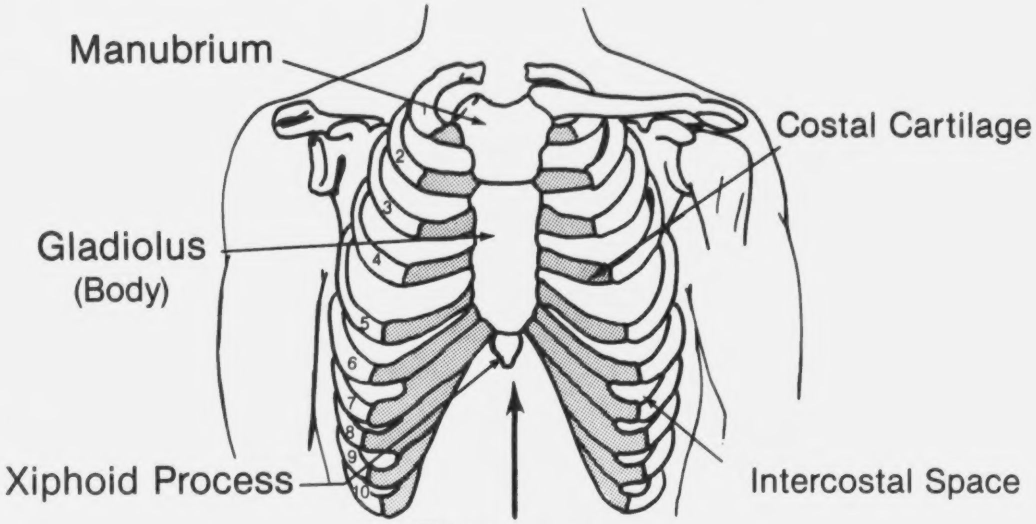
Top View



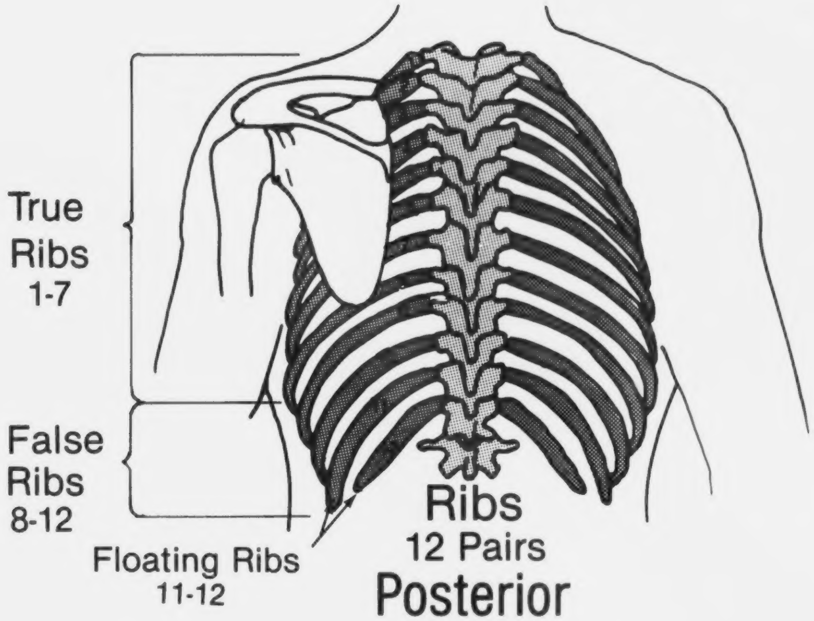
Side View

Reproduced by permission from Anthony, Catherine Parker, and Thibodeau, Gary A.: *Structure & Function of the Body*, ed. 7, St. Louis, 1984, Times Mirror/Mosby College Publishing.

The Ribs and Sternum



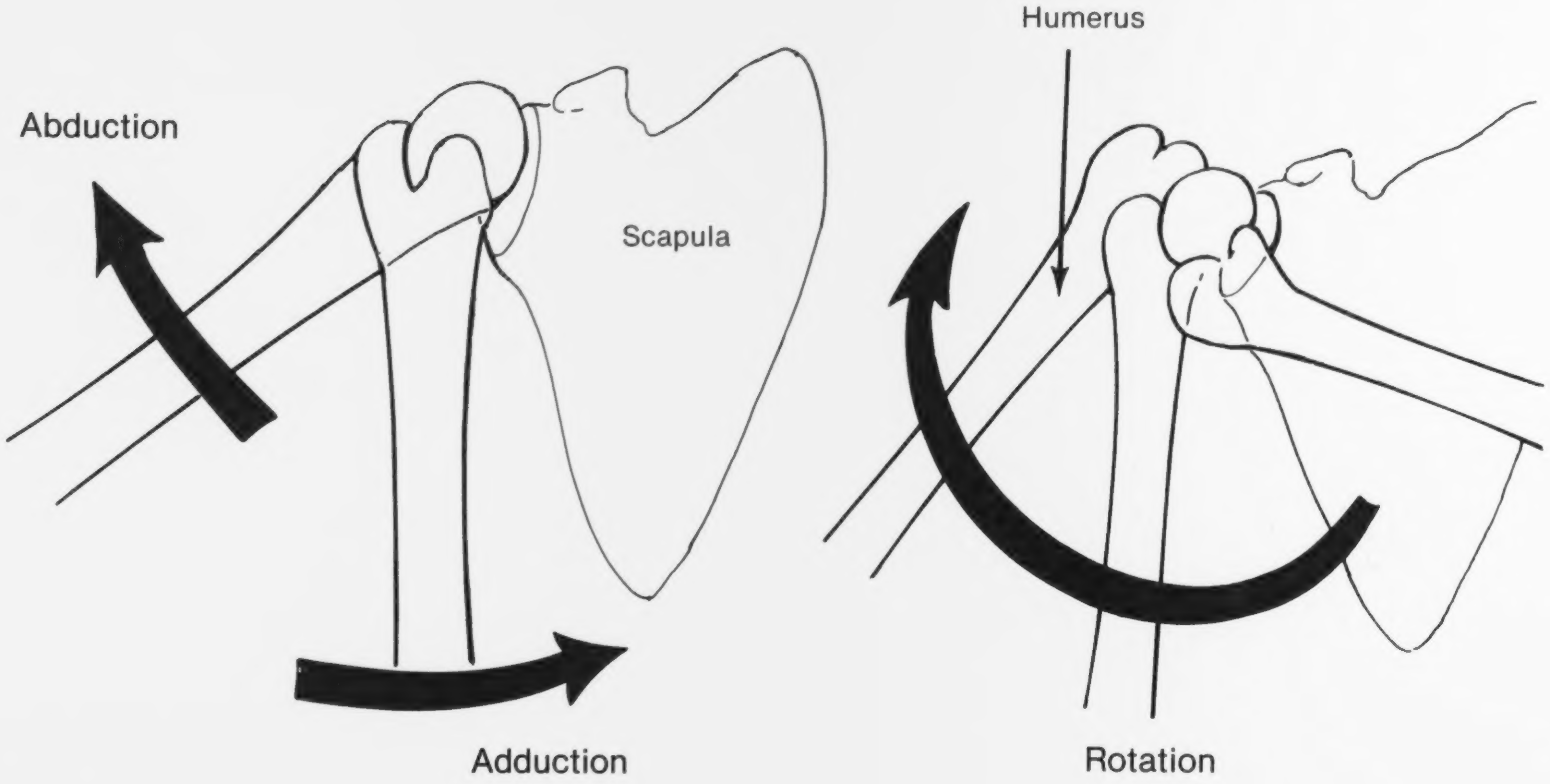
Sternum
Anterior



Ribs
12 Pairs
Posterior

Ball and Socket Joint

(Shoulder)

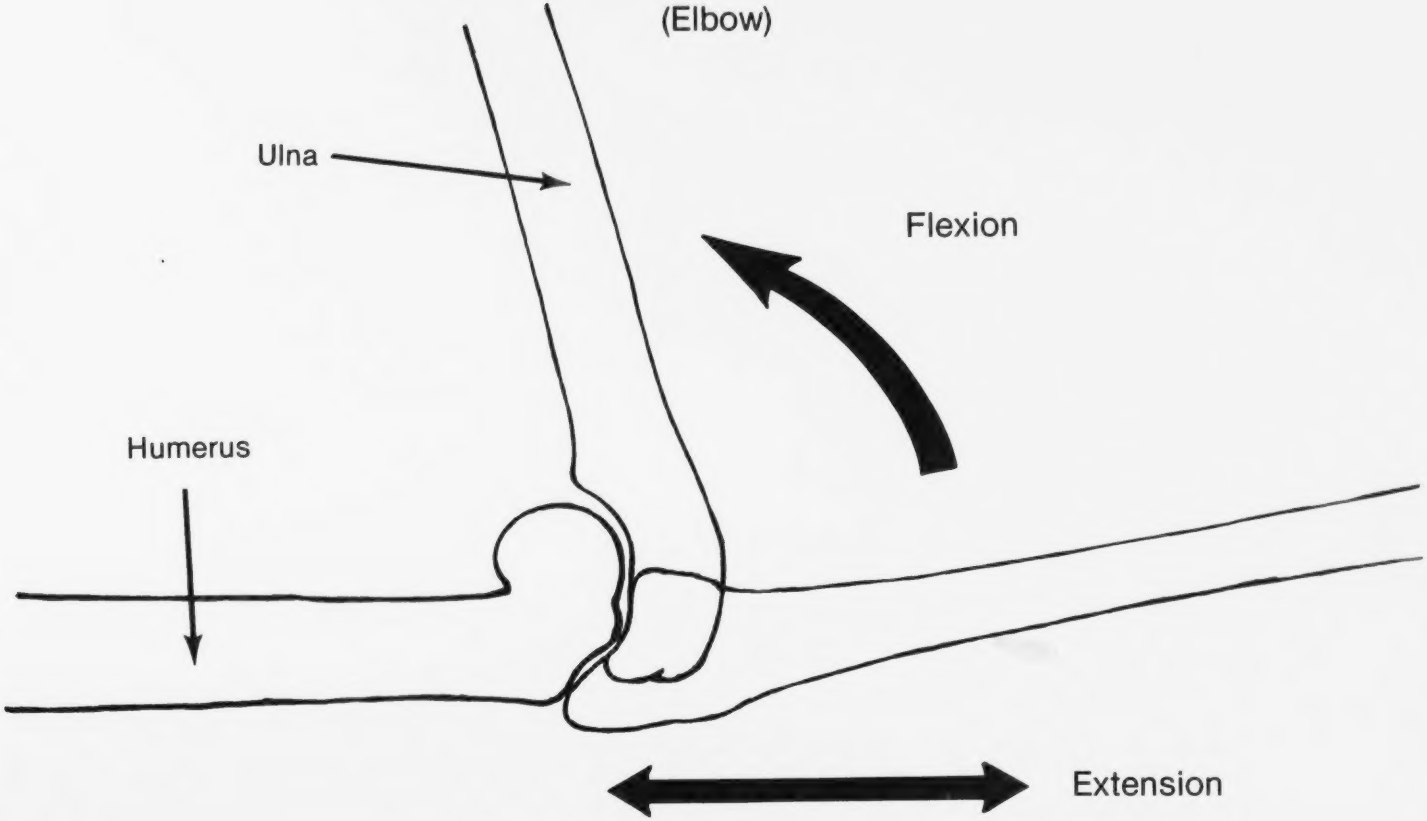


TM #9

AHC - 85-D

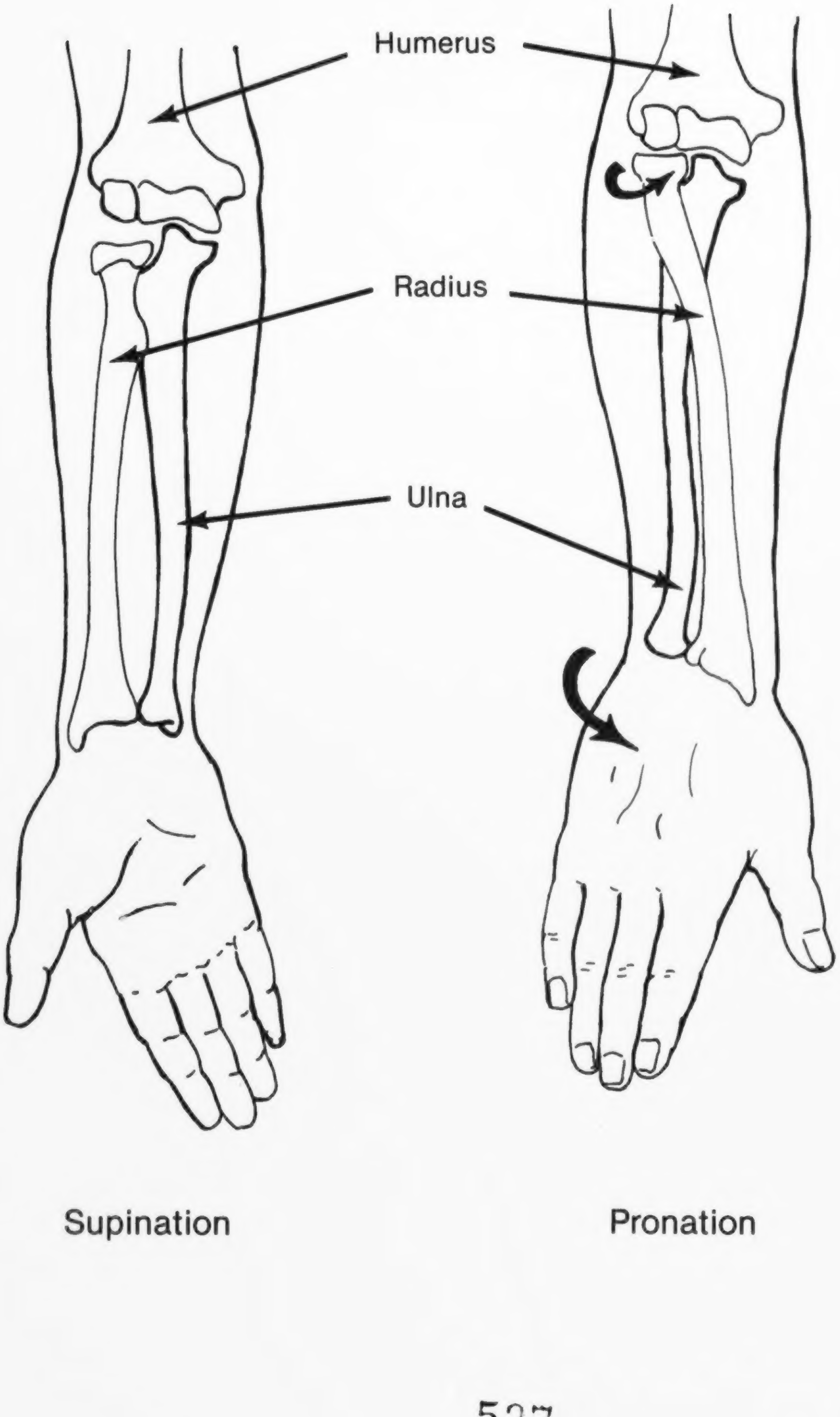
Hinge Joint

(Elbow)



Pivot Joint

(Elbow)



Supination

Pronation

SKELETAL SYSTEM
UNIT II

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

A. Short bones
B. Long bones
C. Sesamoid
D. Flat bone
E. Long bone
F. Long bone
G. Irregular bones
H. Short bones
I. Irregular bones
J. Long bones

Assignment Sheet #2

A. 1. Nasal bone
   2. Maxillary bone
   3. Lacrimal bone
   4. Maxillary bone
   5. Mandible
   6. Zygomatic bone

B. 1. Malleus
   2. Incus
   3. Stapes

C. 1. Temporal bone
   2. Occipital bone
   3. Parietal bone
   4. Frontal bone
   5. Sphenoid bone
   6. Ethmoid bone

Assignment Sheet #3

A. Coccygeal
B. Sacral
C. Lumbar
D. Thoracic
E. Cervical
F. C 1 or Atlas
G. Atlas or C 1
H. C 2 or Axis
I. Axis or C 2
J. C 7
K. T 3
L. T 9
M. T 12
N. L 2
O. L 5
P. Sacrum
Q. Coccyx

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #4

A. Clavicle
B. Scapula
C. Humerus
D. Radius
E. Ulna
F. Carpals
G. Metacarpals
H. Phalanges
I. Femur
J. Patella
K. Tibia
L. Fibula
M. Tarsals
N. Metatarsals
O. Phalanges
P. Os coxae or os innominatum

Assignment Sheet #5

A. 3
B. 1
C. 4
D. 2
E. 1
F. 3
G. 3
H. 4
I. 1
J. 4
K. 1
L. 3
M. 4
N. 1
O. 1
P. 4
Q. 2
R. 4
S. 1
T. 3
U. 1
V. 4
W. 1
X. 2
Y. 1

SKELETAL SYSTEM
UNIT II

TEST

NAME ______________________________ SCORE ______________

1. Match to their correct definitions terms associated with the skeletal system. Write the correct numbers in the blanks.

_____a. Pertaining to a limb or appendage

_____b. System of the body involving the bones, joints, and their attachments

_____c. A dense connective tissue consisting of cells embedded in a matrix that is firm, compact, and capable of withstanding pressure and tension; attached to bone surfaces at the joints

_____d. Bony prominence that resembles part of a knuckle

_____e. Pertaining to the ribs

_____f. Science dealing with the study of bones

_____g. Padlike sac or cavity found in connective tissue usually near a joint which is lined with a synovial membrane and filled with a fluid that helps to reduce friction between moving parts

_____h. Bone

_____i. Science dealing with the study of joints

_____j. Band of fibrous connective tissue connecting bones, cartilages, and other structures and serving for support or attachment of fascia or muscles

_____k. Connection of bones; a joint

_____l. Pertaining to a line running through the center of a body; also pertaining to head and trunk

_____m. Point of junction between two bones

_____n. Any small bone, especially one of the small bones in the ear

_____o. Narrow strip of dense connective tissue that attaches muscle to bone

1. Os
2. Tendon
3. Osteology
4. Axial
5. Ligament
6. Skeletal system
7. Bursa
8. Appendicular
9. Cartilage
10. Arthrology
11. Ossicle
12. Articulation
13. Costal
14. Condyle
15. Joint

TEST

2. List three functions of the skeletal system.

a. ______________________________

b. ______________________________

c. ______________________________

3. List and describe three ways to maintain the skeletal system.

a. ______________________________

____

b. ______________________________

____

c. ______________________________

____

4. Select from the following list materials that make up the composition of bones. Write an "X" in the blank before each correct answer.

_____a. Inorganic salts

_____b. Organic materials

_____c. Stored carbohydrate

_____d. Glycogen

_____e. Water

TEST

5. Classify the following bones according to their type. Write "Long", "Short", "Flat", "Irregular", or "Sesamoid".

EXAMPLE: Ulna — Long

a. Ilium — ______________________________

b. Tibia — ______________________________

c. Sphenoid — ______________________________

d. Ribs — ______________________________

e. Coccyx — ______________________________

f. Patella — ______________________________

g. Tarsals — ______________________________

h. Radius — ______________________________

6. Distinguish between the two parts of the human skeleton. Write an "X" in the blanks before characteristics of the axial skeleton.

______a. Attaches to the axis as appendages

______b. Contains 126 bones

______c. Contains 80 bones

______d. Consists of shoulder, pelvic girdle, and upper and lower extremities

______e. Forms upright part of axis of body

______f. Consists of the skull, vertebral column, ribs, and sternum

TEST

7. Identify the bones of the skull. Write the correct numbers in the blanks. A blank may have more than one answer.

______a. Frontal bone

______b. Ethmoid bone

______c. Mandible

______d. Nasal bone

______e. Incus

______f. Maxillary bone

______g. Zygomatic bone

______h. Lacrimal bone

______i. Malleus

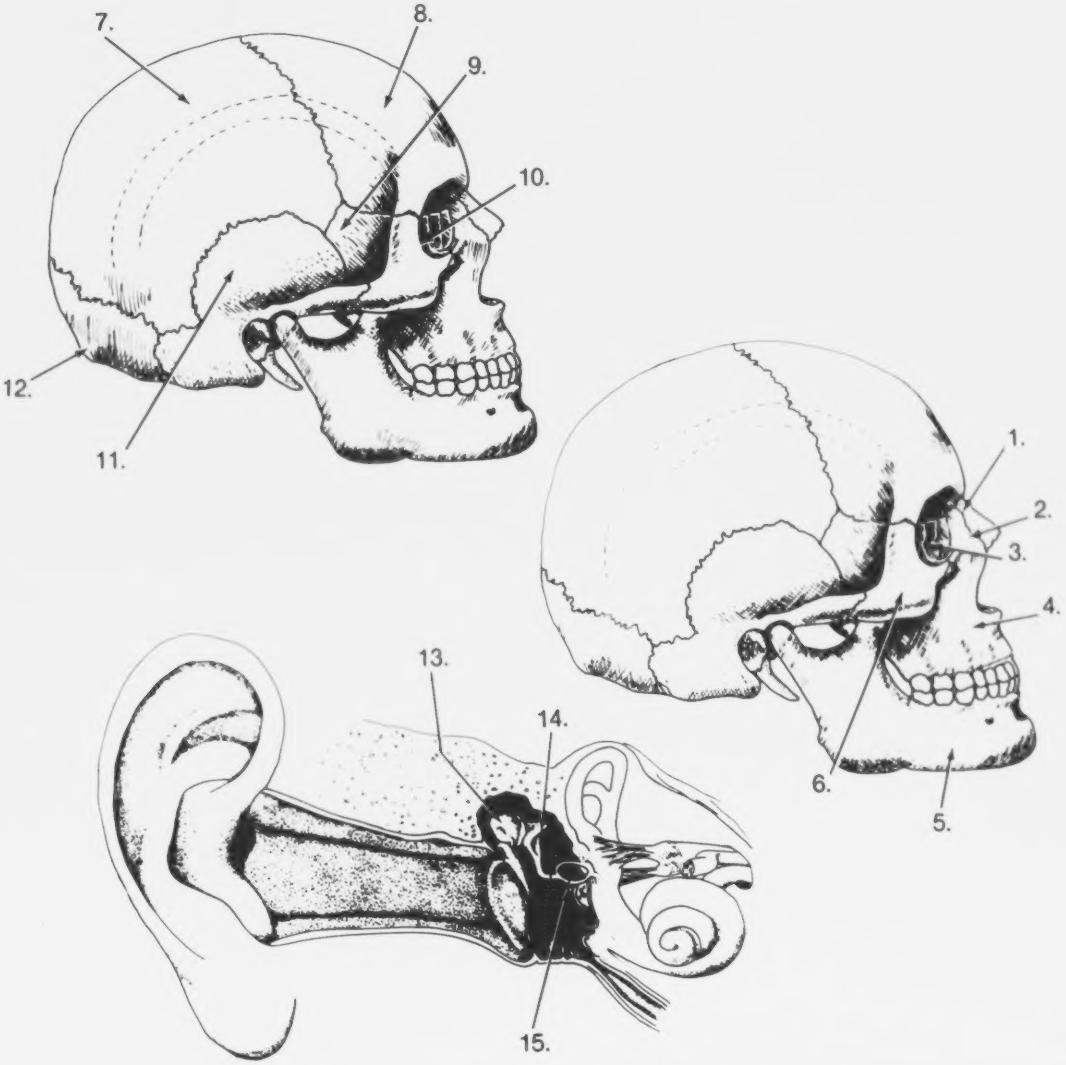
______j. Temporal bone

______k. Parietal bone

______l. Stapes

______m. Sphenoid bone

______n. Occipital bone



TEST

8. Label the following regions of the vertebral column. Write the correct answers in the blanks.

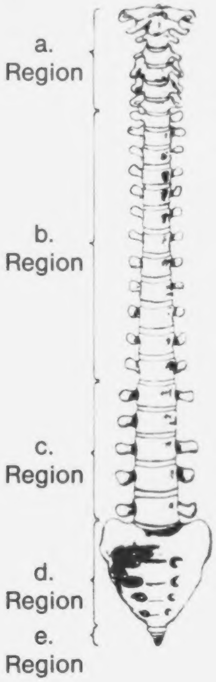
   a. ______________________________

   b. ______________________________

   c. ______________________________

   d. ______________________________

   e. ______________________________



9. Complete the following statements concerning characteristics of ribs and the sternum. Circle each correct answer.

   a. There are (7, 8, 12) pairs of ribs.

   b. All ribs attach to the (cervical, thoracic) region of the vertebral column.

   c. The upper (5, 7) pairs of ribs are called "true ribs."

   d. "True ribs" are attached to the sternum by costal (cartilage, muscles).

   e. The lower (2, 3, 5) pairs of ribs called "false ribs."

   f. "False ribs" (do, do not) attach to the sternum directly.

   g. The upper (3, 5) pairs of false ribs attach to the seventh costal (cartilage, muscle).

   h. The lower (2, 3, 5) pairs of false ribs do not attach at all, and are called "floating ribs."

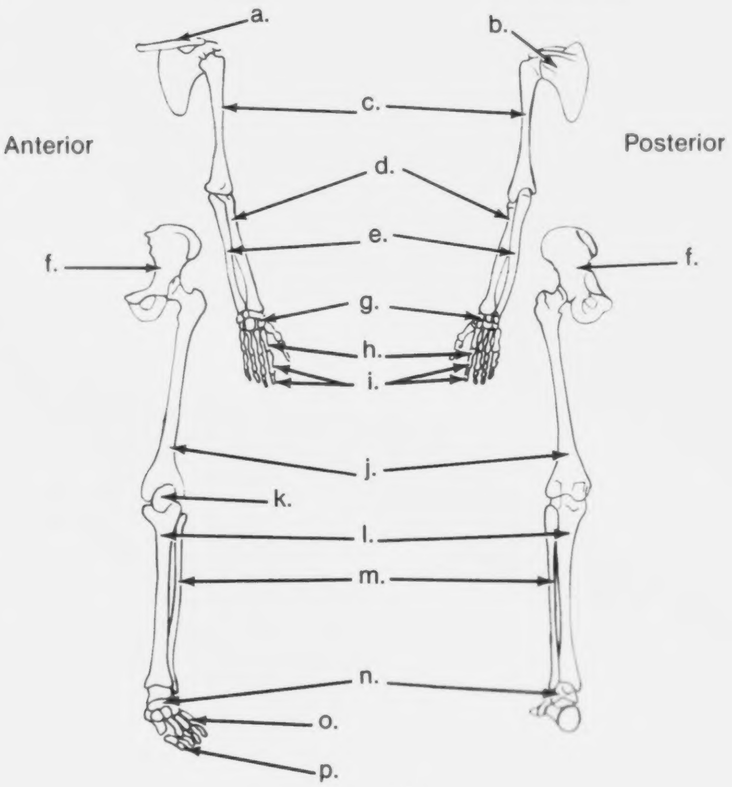
   i. The sternum is a single bone, also called the (shoulder blade, breastbone).

   j. The lowest division of the sternum is called the (manubrium, gladiolus, xiphoid process).

TEST

10. Identify the following bones of the appendicular skeleton. Write the correct names in the blanks.

Phalanges
Radius
Scapula
Tibia
Metatarsals
Ulna
Carpals
Os coxa
Patella
Fibula
Metacarpals
Clavicle
Tarsals
Femur
Humerus



a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

e. ______________________________

f. ______________________________

g. ______________________________

h. ______________________________

i. ______________________________

j. ______________________________

k. ______________________________

l. ______________________________

m. ______________________________

n. ______________________________

o. ______________________________

p. ______________________________

TEST

11. Select from the following list true statements concerning the functions of the articular system. Write an "X" in the blank before each correct answer.

______a. Joints allow for changes of position and body motion

______b. Joints help to bear weight of the body

______c. The joint capsule, ligaments, tendons, muscles, and articular discs provide stability for the joint

______d. Blood lubricates the joints and nourishes the cartilages

12. Classify joints according to the amount of movement. Write an "I" in a blank before an immovable joint, an "S" before a slightly movable joint, and an "M" in a blank before a movable joint.

______a. Symphysis pubis

______b. Skull sutures

______c. Knee and ankle joints

______d. Vertebral discs

______e. Shoulder joints

______f. Elbow and wrist joints

13. Match types of movable joints on the right with their correct characteristics. Write the correct numbers in the blanks.

______a. A convex surface fits into a concavity; motion is limited to flexion and extension in a single plane

______b. Articular surfaces are flat, or with one surface slightly concave, and the other slightly convex; movement is gliding only

______c. A pivot-like process rotates within a bony fossa around a longitudinal axis; motion is limited to rotation to the side

______d. The ball-shaped head fits into a concave socket; movement is in all planes in addition to rotation

______e. Articular surface of each bone is concave in one direction and convex in another; movement is possible in two directions

______f. An oval-shaped condyle fits into an elliptical cavity; motion is possible in two planes at right angles to each other

1. Ball and socket
2. Hinge
3. Pivot
4. Condyloid
5. Saddle
6. Gliding

TEST

14. Match types of articular movements with their correct descriptions. Write the correct numbers in the blanks.

______a. Moving the bones of the forearm so that the radius and ulna are parallel; the palm is moved from a posterior to an anterior position

______b. Moving the bones of the forearm so that the radius and ulna are not parallel; the palm is moved from an anterior to a posterior position

______c. Moving the bone away from the midline

______d. Moving the bone toward the midline

______e. Moving the sole of the foot outward at the ankle joint

______f. Moving the sole of the foot inward at the ankle joint

______g. Bending or decreasing the angle between two bones

______h. Straightening or increasing the angle between two bones

______i. Moving the bone around a central axis; the plane of motion is perpendicular to the axis

______j. Moving the bone so that the end of it describes a circle and the sides of it describe a cone

1. Abduction
2. Adduction
3. Circumduction
4. Extension
5. Eversion
6. Flexion
7. Inversion
8. Pronation
9. Rotation
10. Supination

15. Describe the education and duties of two health occupations related to the skeletal system.

a. ____

____

____

____

b. ____

____

____

____

SKELETAL SYSTEM
UNIT II

ANSWERS TO TEST

1. a. 8
   b. 6
   c. 9
   d. 14
   e. 13
   f. 3
   g. 7
   h. 1
   i. 10
   j. 5
   k. 12
   l. 4
   m. 15
   n. 11
   o. 2

2. Answer should include any three of the following

   a. Provides support and gives shape to the body
   b. Protects the delicate, vital organs
   c. Assists in body movement
   d. Manufactures blood cells in the red bone marrow
   e. Stores minerals such as calcium and phosphorus

3. Description should include any three of the following

   a. Maintain an adequate diet for growth and maintenance
   b. Exercise regularly
   c. Maintain good posture
   d. Use proper body mechanics at all times
   e. Give special attention to foot care

4. a, b, e

5. a. Flat
   b. Long
   c. Irregular
   d. Flat
   e. Irregular
   f. Sesamoid
   g. Short
   h. Long

6. c, e, f

7. a. 8
   b. 10
   c. 5
   d. 1
   e. 14
   f. 2, 4
   g. 6
   h. 3
   i. 13
   j. 11
   k. 7
   l. 15
   m. 9
   n. 12

8. a. Cervical
   b. Thoracic
   c. Lumbar
   d. Sacral
   e. Coccygeal

ANSWERS TO TEST

9. a. 12
   b. Thoracic
   c. 7
   d. Cartilage
   e. 5
   f. Do not
   g. 3, cartilage
   h. 2
   i. Breastbone
   j. Xiphoid process

10. a. Clavicle
    b. Scapula
    c. Humerus
    d. Radius
    e. Ulna
    f. Os coxae
    g. Carpals
    h. Metacarpals
    i. Phalanges
    j. Femur
    k. Patella
    l. Tibia
    m. Fibula
    n. Tarsals
    o. Metatarsals
    p. Phalanges

11. a, b, c

12. a. S
    b. I
    c. M
    d. S
    e. M
    f. M

13. a. 2
    b. 6
    c. 3
    d. 1
    e. 5
    f. 4

14. a. 10
    b. 8
    c. 1
    d. 2
    e. 5
    f. 7
    g. 6
    h. 4
    i. 9
    j. 3

15. Evaluated to the satisfaction of the instructor

MUSCULAR SYSTEM
UNIT III

SUGGESTED ACTIVITIES

I. Unit objectives

   A. Objective sheet

   B. Suggested activities

   C. Supplements

      1. Supplement #1 — Common Diseases, Disorders, and Injuries of the Muscles

      2. Supplement #2 — Crossword Puzzle of Terms Associated with the Muscular System

   D. Transparency masters

      1. TM #1 — Anatomical Directions

      2. TM #2 — Anatomical Directions (Continued)

      3. TM #3 — Muscles: Anterior View

      4. TM #4 — Muscles: Posterior View

      5. TM #5 — Posture: Standing

      6. TM #6 — Posture: Sitting

      7. TM #7 — Lifting Correctly and Incorrectly

   E. Information sheet

   F. Assignment sheets

      1. Assignment Sheet #1 — Complete a Skeletal Muscle Crossword Puzzle

      2. Assignment Sheet #2 — Perform Active Range-of-Motion Exercises

      3. Assignment Sheet #3 — Apply Principles of Body Mechanics

   G. Answers to assignment sheets

   H. Test

   I. Answers to test

SUGGESTED ACTIVITIES

II. Instructor's guide

A. Review unit and plan presentation.

B. Order or obtain materials desired to supplement unit.

1. Filmstrip — *The Skeletal and Muscular Systems*

(NOTE: This 17-minute filmstrip with full-color artwork depicts the major bones and muscles. The filmstrip also explains the nature and function of various muscles and explains the distinction between voluntary and involuntary muscle activity. Order from Medcom, Inc.; P.O. Box 116, Garden Grove, California 92642. Call toll free 1-800-854-2485.)

2. Brochures and pamphlets from physical therapists, massage therapists, muscular dystrophy society, etc. for bulletin board display.

3. Model(s) of human body and its muscular system

C. Introduce unit by stressing the need for a consistent exercise program to maintain normal functioning of the muscular system.

- Show students pictures of normal muscles and atrophied muscles. Relate how atrophy affects normal functioning.

- Dissect animal muscles to demonstrate the difference in healthy and unhealthy muscle tissue.

- Ask an exercise therapist to speak to the class on the importance of keeping the muscular tissue toned. Have this individual also explain how muscle tissues protect internal organs.

- Make a motivational bulletin board display of people exercising and using their muscles in a healthy manner.

D. Provide students with unit.

E. Discuss information and assignment sheets.

1. Use Information Sheet, Section I, to introduce students to terms and definitions associated with the muscular system.

    - Allow students to complete Assignment Sheet #1 as a review of terms.

2. Use Information Sheet, Sections II through V, to discuss the functions and characteristics of the principal skeletal muscles.

    - Use Transparencies #1 through #4 to illustrate your discussion.

SUGGESTED ACTIVITIES

- Show filmstrip *The Skeletal and Muscular Systems.*
- Use muscular models to show students the skeletal muscles and how they are arranged on the body. Have students feel their own muscles as they review this information.
- Have students complete Supplement #2 as a review of muscle nomenclature.
- Make a mobile showing pictures related to the functions of the muscular system.
- Play Concentration to assist students in learning the various skeletal muscles and their functions. Write the name of each muscle on a separate three-by-five-inch card. Write the function of each muscle on an additional card. Shuffle the cards and randomly number the backs of each. Tack the cards on a bulletin board with the numbers facing the class. Have students match muscles to their correct functions.

3. Use Information Sheet, Section VI, to discuss ways of maintaining a healthy muscular system.
    - Ask an exercise therapist to put on a one-day workshop to teach exercises for muscular maintenance.
    - Have students complete Assignment Sheet #2 to observe and assess their own levels of muscular mobility.
4. Use Information Sheet, Section VII, and Assignment Sheet #3 to introduce students to the principles of body mechanics.
    - Use Transparencies #5 through #7 to illustrate your discussion of proper body mechanics.
    - Have students apply principles of body mechanics by completing Assignment Sheet #3. Evaluate this assignment sheet and average with test score.
5. Discuss Information Sheet, Section VIII, to introduce students to different occupations related to the muscular system.
    - Take a field trip to a department of physical therapy and have a physical therapist demonstrate procedures that are performed. Discuss the specialty areas—such as sports medicine—available to the physical therapist.
    - Invite a massage therapist to visit the class to discuss job opportunities in this new and expanding field.
    - Provide Supplement #1 to students interested in a nursing career.

SUGGESTED ACTIVITIES

F. Give test.

G. Critique test and discuss in class.

H. Reteach and retest if necessary.

I. Complete appropriate section of students' competency profiles.

III. Unit references

A. Boyles, Marcia V., Margaret K. Morgan, and Mary H. McCaulley. *The Health Professions*. Philadelphia: W.B. Saunders Company, 1982.

B. Jacob, Stanley W., Clarice Francone, and Walter Lossow. *Structure and Function in Man*. Philadelphia: W. B. Saunders Company, 1978.

C. Reid, Jamee Noell. *Practical Nursing: Volume III*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1984.

D. Rogers, Helen V. and Ann Benson. *Practical Nursing: Volume I*, rev. by Jamee Reid Sloan. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1981.

MUSCULAR SYSTEM
UNIT III

SUPPLEMENT #1 — COMMON DISEASES, DISORDERS, AND INJURIES OF THE MUSCLES

INJURIES

Contusion — Injury of soft tissues by blunt force causing ecchymosis and possibly hematoma; treatment of contusions includes elevating affected part and applying first cold and then heat to the area; elastic wraps may be used to reduce swelling and hemorrhaging

Sprain — Stretched or torn ligament caused by wrench or twist of the joint; causes pain, swelling, ecchymosis, and immobility; treatment depends on severity of condition; patient is x-rayed to make sure that bones have not been injured

Strain — Injury to musculotendinous unit by excessive force or by stretching which causes hemorrhaging into muscle; may be treated with cold compresses and then with heat; usually splinted or wrapped for support

COMMON DISEASES AND DISORDERS

Bursitis — Inflammation of the bursa caused by an increase of fluid, distension, and calcification; symptoms include pain and tenderness of the joints and limited motion; treatment includes heat applied to affected areas, resting the joint, and, in severe cases, surgery

Tenosynovitis — Inflammation of a tendon and its synovial membrane, produced by infection in a wound, from nearby tissues, or from a systemic infection; symptoms include pain and tenderness at site upon movement, swelling of affected area, and limited movement, treatment includes heat applied to affected area and resting of area

Ganglion — Mass of nervous tissues caused by distended synovial sacs under the skin near a joint, usually a wrist; symptoms include a mass at site and soreness when area is bumped; treatment includes excision of mass if occurrence causes severe pain or hampers movement

DEBILITATING MUSCULAR DISEASES AND DISORDERS

Muscular dystrophy — Gradual degeneration of muscle fibers resulting in progressive weakness and wasting of symmetric groups of skeletal muscles, which leads to disability and deformity: there are different forms of muscular dystrophy, each affecting different muscle groups; all forms are considered genetic in origin; symptoms include progressive muscle weakness; usually in the third year of life, difficulty in rising from a sitting or supine position, waddling gait, sway back, frequent falls, enlargement of thigh muscles and muscles in upper arms from fatty infiltration, contractures and deformities of the large and small joints, and weakness in respiratory muscles; there is no cure at this time, and treatment is palliative.

Myasthenia gravis — Progressive muscle weakness and paralysis caused by a defect in nerve transmission to the muscles. Nerve tissue itself is not affected. Interruption in the transmission of impulses to the muscles results in muscles that do not contract. Muscle weakness aggravated by activity is the most common symptom, with fatigue, double vision, drooping eyelids, difficulty swallowing, and eventual paralysis being other common symptoms. Like other degenerative diseases, myasthenia gravis cannot be cured. Treatment consists of administering drugs to relieve symptoms.

MUSCULAR SYSTEM
UNIT III

SUPPLEMENT #2 — CROSSWORD PUZZLE OF TERMS ASSOCIATED WITH THE MUSCULAR SYSTEM

Use the clues below to complete the crossword puzzle on the next page. If you get stuck, review Information Sheet, Sections I, III, and IV.

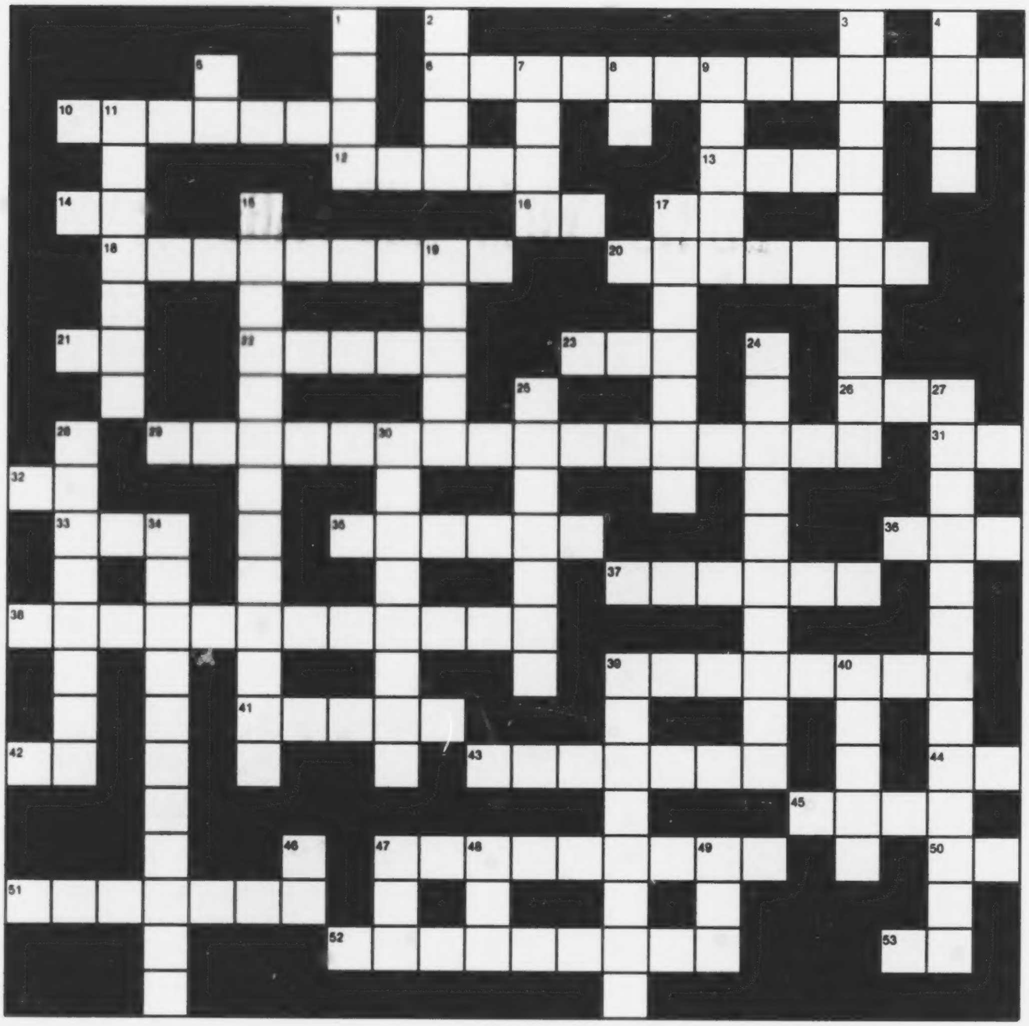
ACROSS

6. Ability of a muscle to stretch
10. Using flexor muscles to bend joint or limb
12. Slight tension in muscle that is present even when muscle is resting
13. French for *very*
14. Official abbreviation for *Nevada*
16. Official abbreviation for *Tennessee*
17. Abbreviation for *Friday*
18. Muscles that move toward a part or toward the midline
20. Lacking muscle tone
21. Official abbreviation for *Colorado*
22. Blurr; to become murky or dim
23. Carton
26. Involuntary spasmodic contraction of a muscle repeated regularly
29. Procedure to measure electric impulses within muscle
31. Official abbreviation for *Oklahoma*
32. Official abbreviation for *Arkansas*
33. Extrasensory perception (abbr.)
35. Backless chairs or bowel movements
36. Prefix meaning *ear*
37. Instruction
38. Weakening of tone in functions or organs of body
39. Pertaining to atrophy or the process of wasting away
41. Consumers
42. Official abbreviation for *Illinois*
43. Narrow strips of connective tissue that attach muscle to bone
44. Official abbreviation for *Iowa*
45. Bucket
47. Ringlike muscle that closes body opening
50. Official abbreviation for *Indiana*
51. Extensibility
52. Muscles that straighten a joint
53. Official abbreviation for *Kentucky*

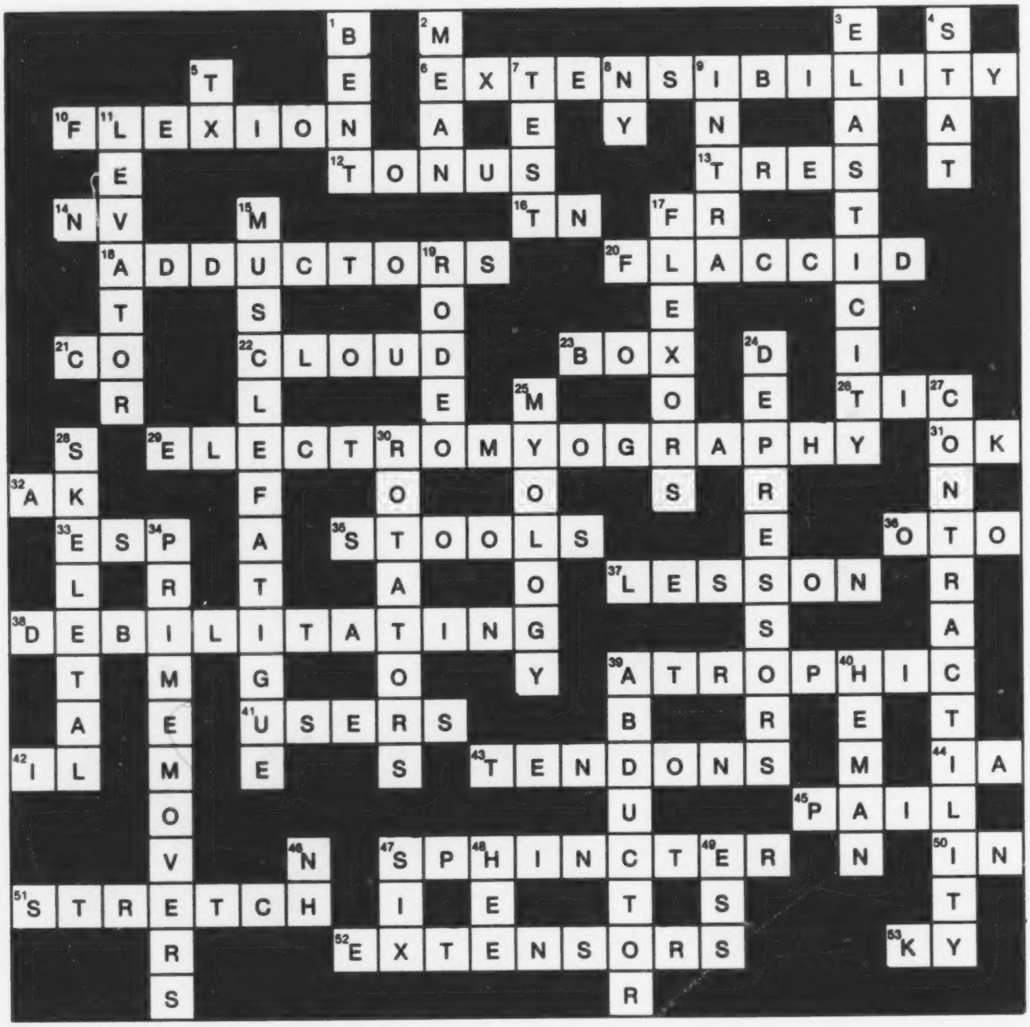
DOWN

1. Crooked
2. Not kind
3. Ability of muscle to return to its original length after stretching
4. At once
5. Official abbreviation for *Texas*
7. Exam
8. Official abbreviation for *New York*
9. Prefix when added to *muscle* that means within the muscle
11. Muscle used to lift a part
15. Loss of muscle's power to contract after long periods of contraction (2 wds)
17. Muscles used to bend a joint
19. Cowboy circus
24. Muscles used to lower a part
25. Study of muscles
27. Ability of muscle to shorten and thicken when given proper stimulus
28. Bundles of striated muscle tissue surrounded by connective tissue
30. Muscles that revolve a part on its axis
34. Muscles that are primarily responsible for a specific action (2 words)
39. Muscle that moves away from part
40. Opposite of 99-pound weakling
46. Official abbreviation for *New Hampshire*
47. One more than five; hex
48. Laugh syllable
49. Curvy letter

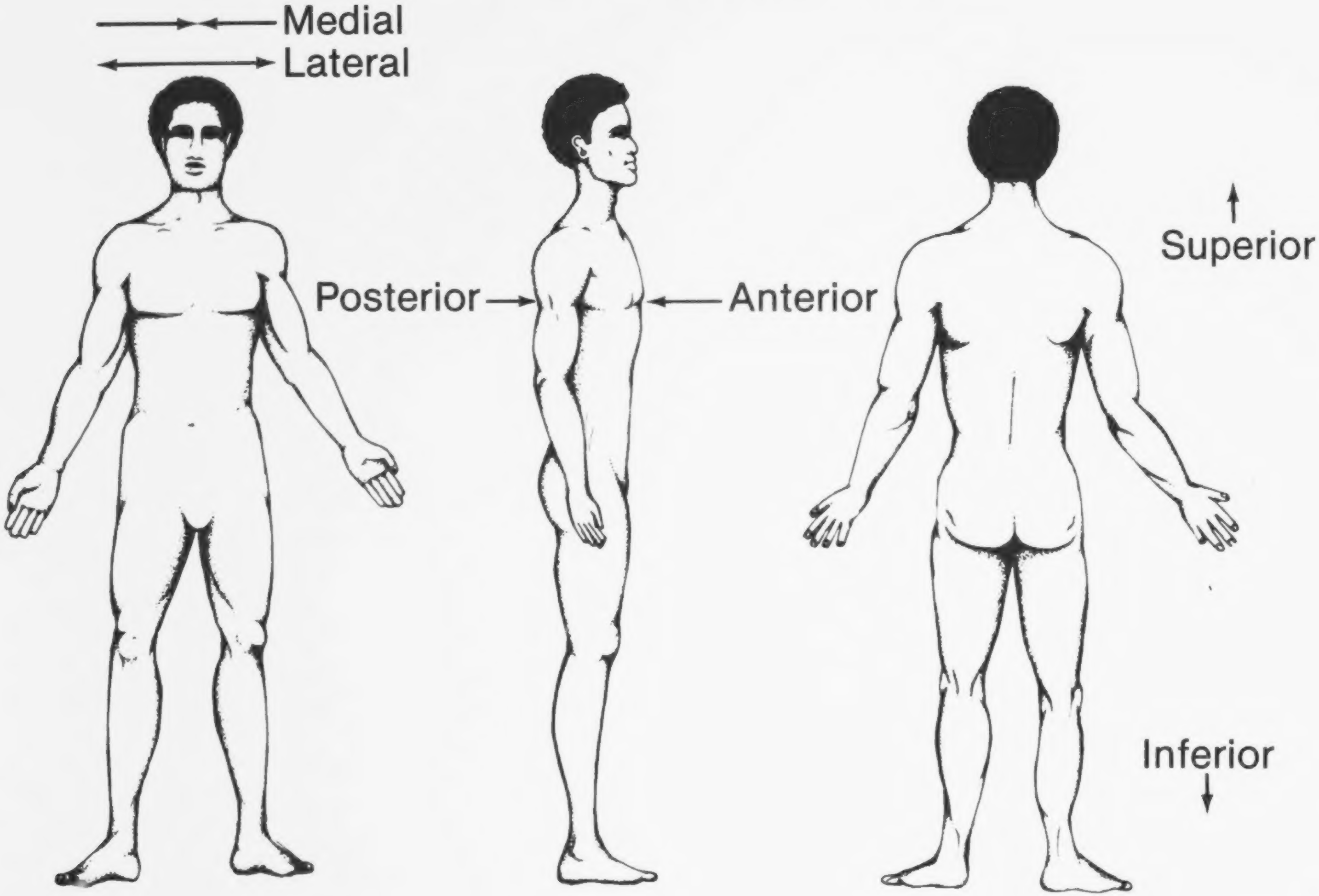
SUPPLEMENT #2



SUPPLEMENT #2



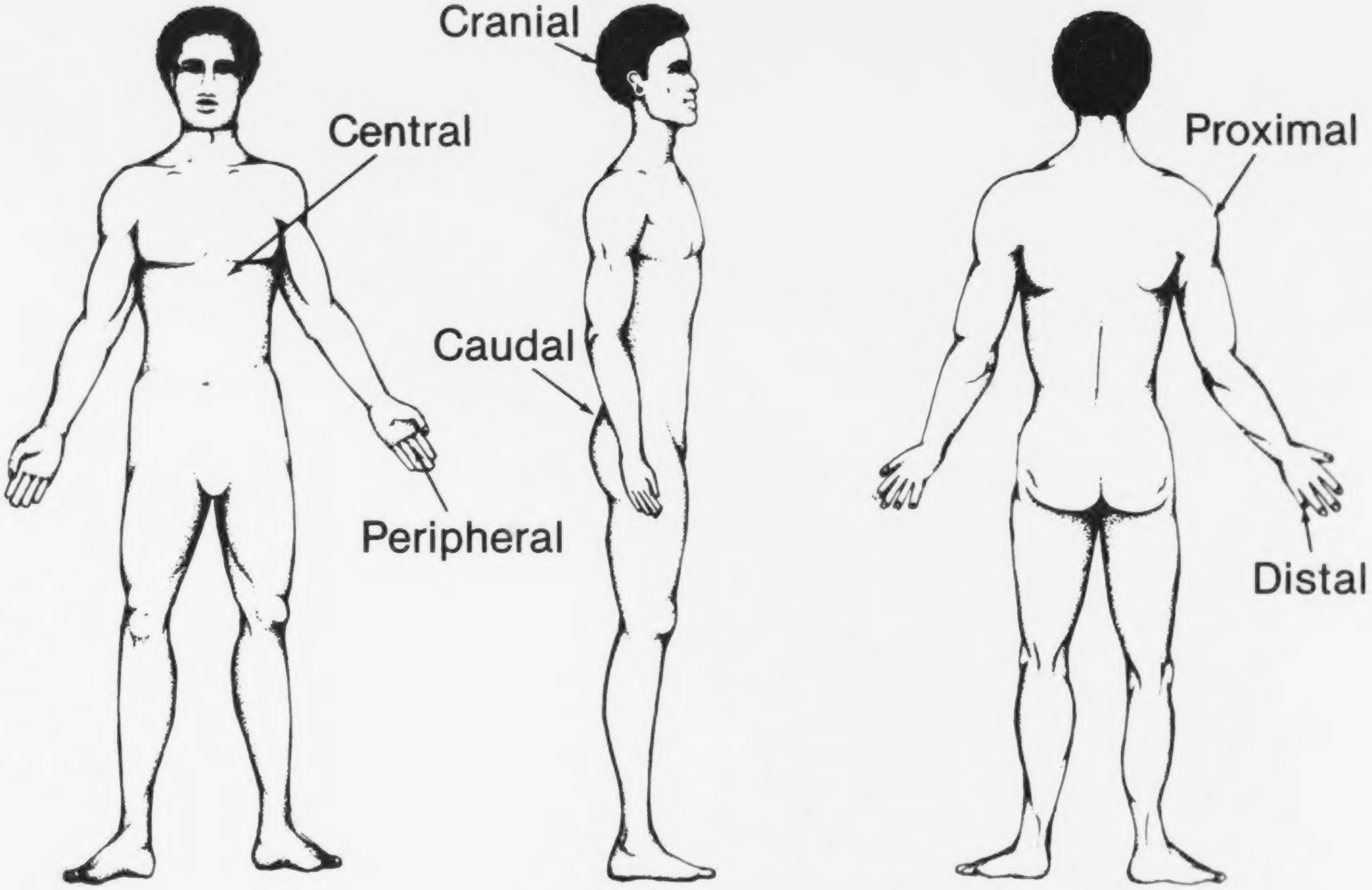
Anatomical Directions



TM #1

AHC - 151-D

Anatomical Directions
(Continued)



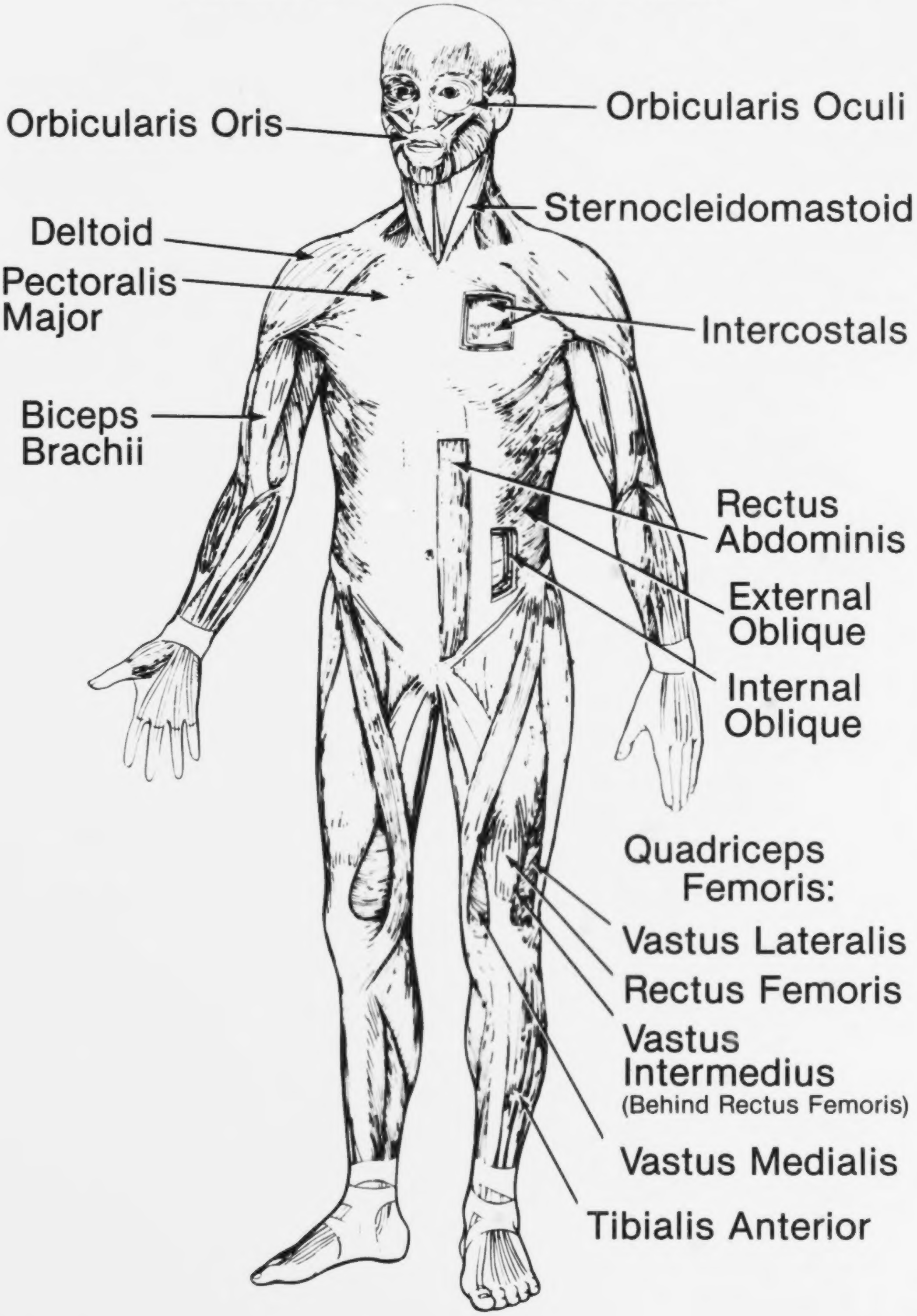
TM #2

AHC - 153-D

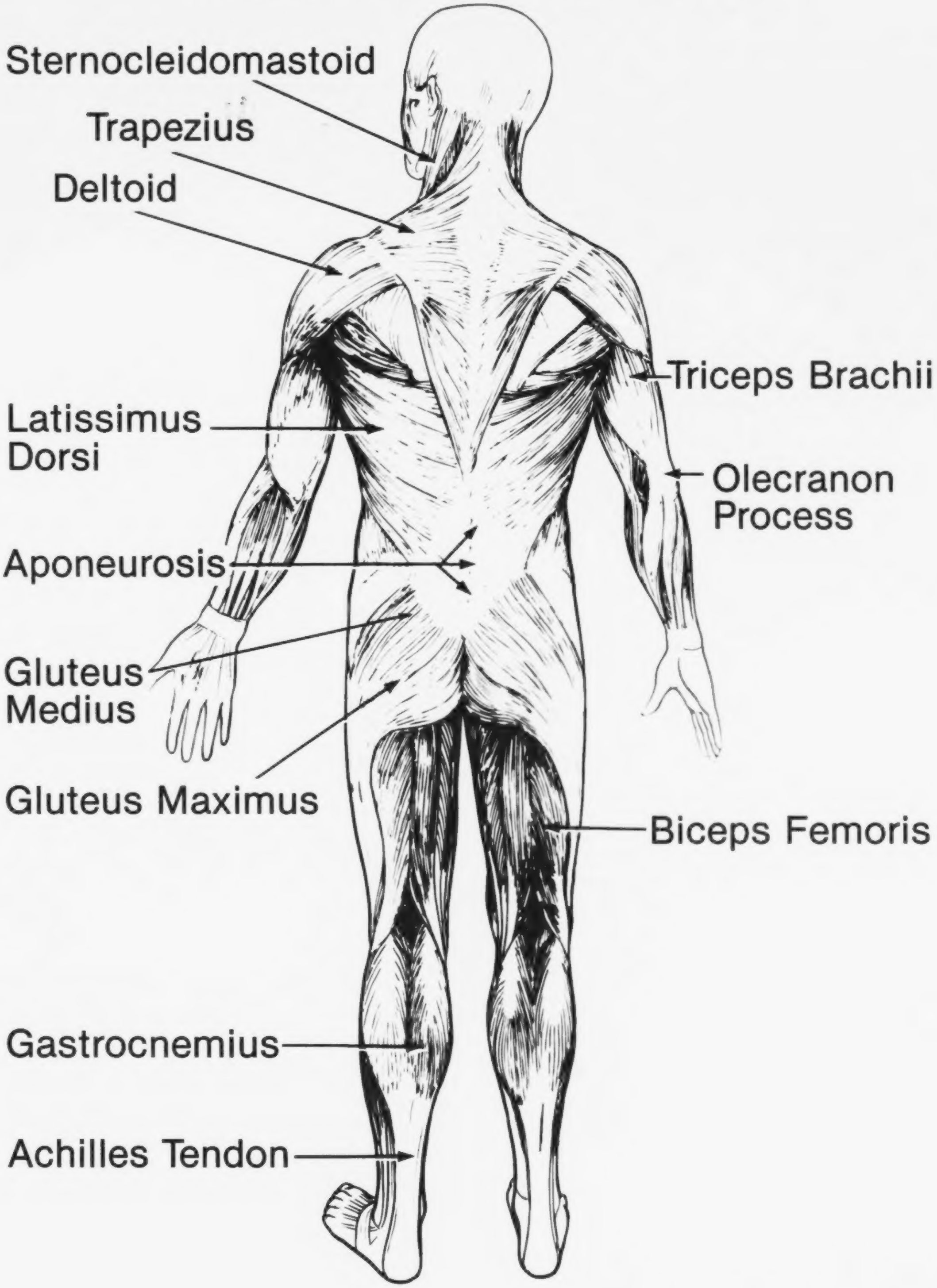
620

621

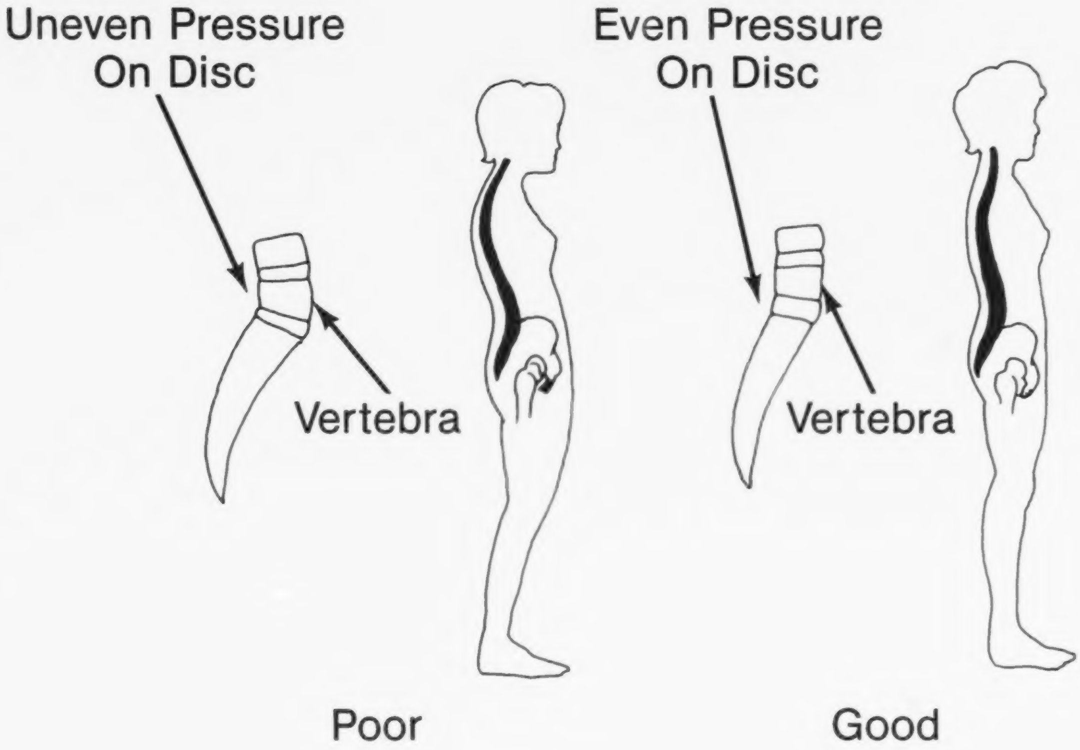
Muscles: Anterior View



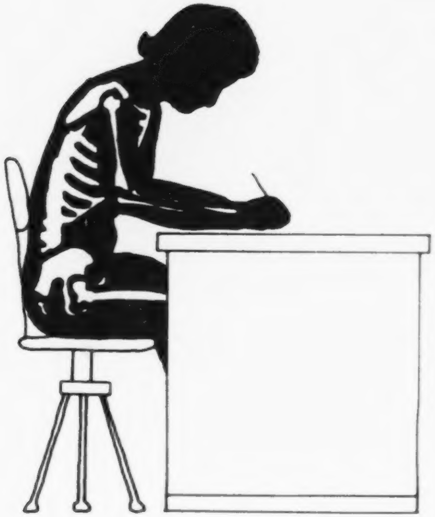
Muscles: Posterior View



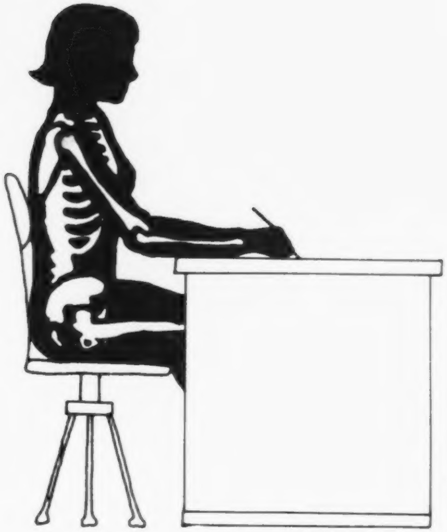
Posture: Standing



Posture: Sitting



Poor

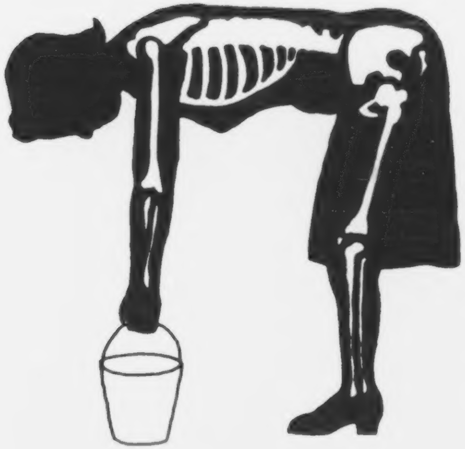


Good

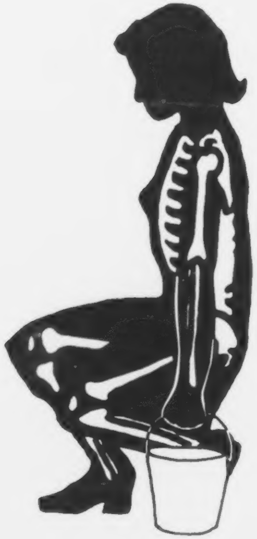
TM #6

AHC - 161-D

Lifting Correctly and Incorrectly



Poor



Good

TM #7

AHC - 163-D

MUSCULAR SYSTEM
UNIT III

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

1 B						2 R	E	C	T	U	S	A	B	D	O	3 M	I	N	I	S		
R				4 G												E						
5 A	C	H	I	L	L	E	6 S	T	E	N	D	7 O	N			8 D	E	L	T	9 O	I	D
C				U			T					C		10 D		I				R		
H				T			E					U		O		U				I		11 I
I				E		12 O	R	B	I	C	U	L	A	R	I	S				S		N
I				U			N					I		S								T
				S			O							I				13 P		14 B		E
					15 R	E	C	T	U	S					16 A	N	T	E	R	I	O	R
							L											C		C		M
				17 I	N	T	E	R	C	O	S	T	A	L	S			T		E		E
							I											O		P		D
		18 M		19 Q	U	A	D	R	I	C	E	P	S	F	E	20 M	O	R	I	S		I
		A					O									U		A		B		U
		X					M		21 V			22 O		23 T		S		L		R		S
24 T		I					A		A			L		R		C		I		A		
R		M			25 V	A	S	T	U	S	M	E	D	I	A	L	I	S		C		
A		U					T		T			C		C		E		M		H		
26 P	O	S	T	E	R	I	O	R	U			R		E				A		I		
E							I		S			A		P				J		I		
Z							D					N		S				O				
I												O			27 T			R				28 L
U			29 E		30 G	A	S	T	R	O	C	N	E	M	I	U	S					A
S			X									P			B				31 F			T
			T			32 A	P	O	N	E	U	R	O	S	I	S			E			E
33 B	I	C	E	P	S							O			A				M			R
			R									C			L				O			A
			N			34 O	B	L	I	Q	U	E			35 I	N	T	E	R	N	A	L
			A									S			S				I			I
			36 L	A	T	I	S	S	I	M	U	S							S			S

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #2 — Evaluated to the satisfaction of the instructor

Assignment Sheet #3 — Evaluated to the satisfaction of the instructor

MUSCULAR SYSTEM
UNIT III

TEST

NAME ____ SCORE ________________

1. Match to their correct definitions terms associated with the muscular system. Write the correct numbers in the blanks.

_____a. Slight tension in the muscle that is always present, even when muscle is resting

_____b. Loss of muscle's power to contract after prolonged period of contraction

_____c. Muscle that counteracts with a prime mover

_____d. Bundles of striated muscle tissue surrounded by connective tissue

_____e. Coordination of body alignment, balance, and movement

_____f. Muscle primarily responsible for a specific action

_____g. The study of muscles

_____h. Weakening of tone in functions or organs of body

_____i. Alignment and position of the body

_____j. Procedure that measures electrical impulses within muscle

_____k. Narrow strip of dense connective tissue that attaches muscle to a bone

_____l. Lacking muscle tone

_____m. Within a muscle

_____n. To waste away

1. Antagonist
2. Atrophy
3. Body mechanics
4. Debilitating
5. Electromyography
6. Flaccid
7. Intramuscular
8. Muscle fatigue
9. Myology
10. Posture
11. Prime mover
12. Skeletal muscles
13. Tendon
14. Tonus

2. List the major functions of muscles.

a. ____

b. ____

c. ____

d. ____

TEST

3. Select correct characteristics of muscle tissue. Write the correct numbers in the blanks.

_____a. Contractility is the ability of a muscle to

1) Respond to stimulation
2) Return to its original length after stretching
3) Shorten and thicken when given proper stimulus

_____b. Elasticity is the ability of a muscle to

1) Respond to stimulation
2) Return to its original length after stretching
3) Shorten and thicken when given proper stimulus

_____c. Irritability is the ability of a muscle to

1) Respond to stimulation
2) Return to its original length after stretching
3) Stretch

_____d. Extensibility is the ability of a muscle to

1) Shorten and thicken when given proper stimulus
2) Stretch
3) Respond to stimulation

4. Name types of muscles, given their actions. Write the correct muscle names in the blanks.

____________________a. Draw toward median line or center of body

____________________b. Revolve a part on its axis

____________________c. Lift a part

____________________d. Ringlike muscles that close body openings

____________________e. Draw away from a median line or center of body

____________________f. Bend a joint

____________________g. Straighten or extend a limb

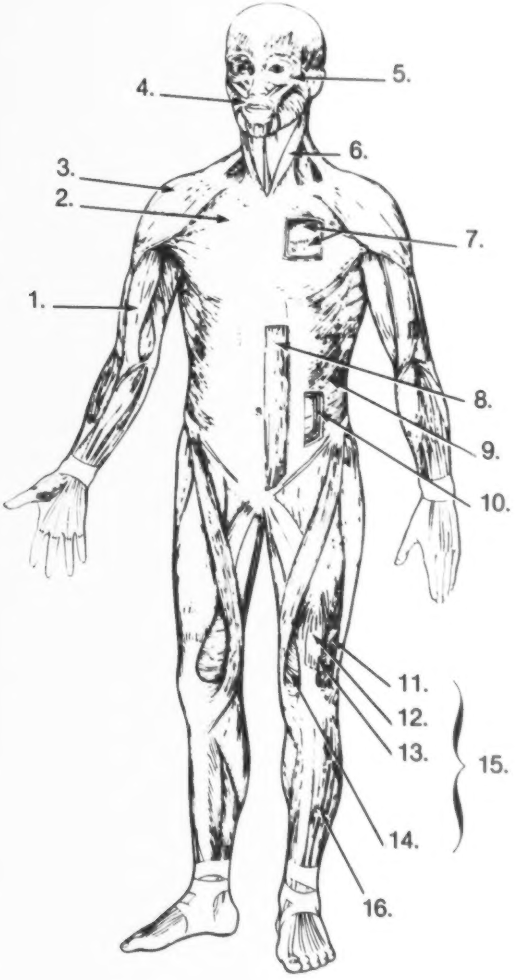
TEST

5. Identify principal skeletal muscles in the following drawings. Write the correct numbers in the blanks.

ANTERIOR MUSCLES

______a. **Rectus abdominis**
______b. **External oblique**
______c. **Orbicularis oculi**
______d. **Deltoid**
______e. **Tibialis anterior**
______f. **Rectus femoris**
______g. **Sternocleidomastoid**
______h. **Orbicularis oris**

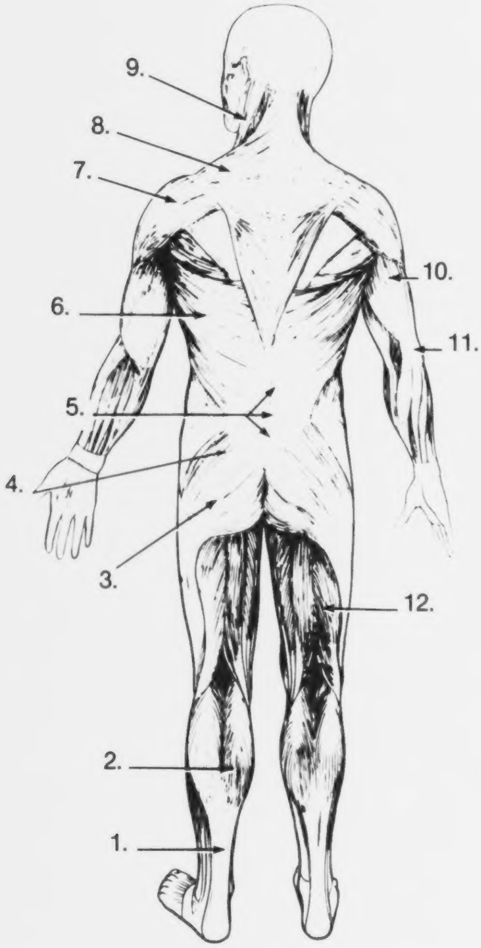
______i. **Biceps brachii**
______j. **Vastus medialis**
______k. **Vastus lateralis**
______l. **Vastus intermedius**
______m. **Internal oblique**
______n. **Intercostals**
______o. **Pectoralis major**
______p. **Quadriceps femoris**



TEST

POSTERIOR MUSCLES

______a. **Biceps femoris**
______b. **Achilles tendon**
______c. **Trapezius**
______d. **Olecranon process**
______e. **Gluteus medius**
______f. **Latissimus dorsi**
______g. **Sternocleidomastoid**
______h. **Triceps brachii**
______i. **Gluteus maximus**
______j. **Gastrocnemius**
______k. **Deltoid**
______l. **Aponeurosis**



TEST

6. List ways of maintaining a healthy muscular system.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

e. ______________________________

f. ______________________________

g. ______________________________

7. Select from the following list reasons for using proper body mechanics. Write an "X" in the blank before each correct answer.

_____a. Preventing muscle strain

_____b. Saving money by making work easier

_____c. Increasing efficiency

_____d. Promoting good posture

_____e. Improving chances of finding an occupation in the health field

_____f. Setting example for others

_____g. Preserving muscle tone and strength

8. Describe education and duties of one health occupation related to the muscular system.

____

____

____

____

____

(NOTE: Test item 9 lists the scored assignment sheet. If it has not been completed, check with your instructor.)

9. Apply principles of body mechanics.

MUSCULAR SYSTEM
UNIT III

ANSWERS TO TEST

1. a. 14
   b. 8
   c. 1
   d. 12
   e. 3
   f. 11
   g. 9
   h. 4
   i. 10
   j. 5
   k. 13
   l. 6
   m. 7
   n. 2

2. a. Allow for movement
   b. Produce heat and energy as a result of a chemical reaction within the muscle tissue
   c. Determine body posture and body mechanics
   d. Protect internal organs

3. a. 3
   b. 2
   c. 1
   d. 2

4. a. Adductors
   b. Rotators
   c. Levators
   d. Sphincters
   e. Abductors
   f. Flexors
   g. Extensors

5. **Anterior muscles**

   a. 8
   b. 9
   c. 5
   d. 3
   e. 16
   f. 12
   g. 6
   h. 4
   i. 1
   j. 14
   k. 11
   l. 13
   m. 10
   n. 7
   o. 2
   p. 15

   Posterior muscles

   a. 12
   b. 1
   c. 8
   d. 11
   e. 4
   f. 6
   g. 9
   h. 10
   i. 3
   j. 2
   k. 7
   l. 5

ANSWERS TO TEST

6. Discussion should include the following

    a. Exercise regularly and sensibly
    b. Avoid excessive load that may cause strain
    c. Learn to relax voluntary muscles at will
    d. Rest sufficiently to relieve muscle fatigue
    e. Use proper body mechanics at all times
    f. Maintain an adequate diet
    g. Maintain adequate oxygen supply

7. a, c, d, f, g

8. Evaluated to the satisfaction of the instructor

9. Evaluated to the satisfaction of the instructor

NERVOUS SYSTEM
UNIT IV

SUGGESTED ACTIVITIES

I. Unit contents

   A. Objective sheet

   B. Suggested activities

   C. Supplements

      1. Supplement #1 — Nervous System Crossword Puzzle
      2. Supplement #2 — Identify the Parts of a Neuron
      3. Supplement #3 — Identify the Lobes of the Cerebral Hemisphere
      4. Supplement #4 — Identify the Functional Areas of the Brain
      5. Supplement #5 — Cranial Nerves Crossword Puzzle
      6. Supplement #6 — Test Cranial Nerves
      7. Supplement #7 — The Eye and Accessory Structures Crossword Puzzle
      8. Supplement #8 — Measure Visual Acuity
      9. Supplement #9 — The Ear Crossword Puzzle
      10. Supplement #10 — Test Hearing
      11. Supplement #11 — Test Sense of Smell and Reaction of Taste Buds
      12. Supplement #12 — Test Reflexes
      13. Supplement #13 — Research and Answer Questions About the Nervous System
      14. Supplement #14 — Diseases and Disorders of the Nervous System and the Sense Organs
      15. Supplement #15 — Diagnostic Tests Used to Assess the Nervous System and Special Sense Organs

   D. Answers to supplements

   E. Transparency masters

      1. TM #1 — Sensory, Connecting, and Motor Neurons
      2. TM #2 — A Synapse

SUGGESTED ACTIVITIES

3. TM #3 — Major Parts of the Brain
4. TM #4 — Functional Areas of the Brain
5. TM #4A — Functional Areas of the Brain Overlay
6. TM #5 — Lobes of the Cerebral Hemisphere
7. TM #6 — Ventricles of the Brain
8. TM #7 — The Cranial Nerves
9. TM #8 — The Spinal Nerves
10. TM #9 — The Eye
11. TM #10 — Accessory Structures of the Eye
12. TM #11 — The Lacrimal Gland and Duct
13. TM #12 — The Ear
14. TM #13 — The Nose
15. TM #14 — The Tongue and Taste Buds

F. Information sheet

G. Assignment sheets

1. Assignment Sheet #1 — Identify the Parts of the Brain
2. Assignment Sheet #2 — Select Correct Statements about the Nervous System
3. Assignment Sheet #3 — Identify Components of the Spinal Cord
4. Assignment Sheet #4 — Identify the Parts of the Eye
5. Assignment Sheet #5 — Identify the Parts of the Ear
6. Assignment Sheet #6 — Select Correct Statements about the Special Senses

H. Answers to assignment sheets

I. Test

J. Answers to test

II. Instructor's guide

A. Review unit and plan presentation.

B. Order or obtain materials to supplement unit.

SUGGESTED ACTIVITIES

1. Films

   (NOTE: Films *a* and *b* below are available to Oklahoma teachers on a free-loan basis. Oklahoma teachers may order from the Film Library, Curriculum and Instructional Materials Center, State Department of Vocational and Technical Education, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364. Out-of-state teachers must order from the address listed with the films.)

   a. *Inner Ear*, color, 11 minutes, 1973. Available from Films, Inc., 1213 Wilmette Avenue, Wilmette, Illinois 60091. Film explains how sound enters and travels through the ear.

   b. *The Eye*, color, 11 minutes, 1973. Available from Films, Inc., 1213 Wilmette Avenue, Wilmette, Illinois, 60091. Film explains the function of the eye.

2. Transparencies and competency profiles

   (NOTE: Order transparencies and competency profiles from the State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

3. Film projector and overhead projector

4. Anamods of the eye, ear, and brain

   (NOTE: Anamods are inexpensive three-dimensional, detailed, anatomically accurate vinyl models of body organs, keyed to illustrated study guides. They snap together easily to illustrate the exact structure and function of each organ. Order from Damon/Instructional System Division, 80 Wilson Way, Westwood, Massachusetts 02090-1898, or call toll free 1-800-348-0025, Customer Service, Extension 614 or 615.)

5. Reprint of September, 1986, *National Geographic* article on the sense of smell

   (NOTE: Order reprints from National Geographic Society, 17th and M Streets, N.W., Washington, D.C. 20036.)

6. Equipment and materials necessary for performance of Supplements #2, #6, #8, and #10-#13

7. Pamphlets and brochures dealing with the nervous system and special senses

C. Introduce unit.

- Prepare a bulletin board with articles from newspapers, magazines, or journals on conditions, treatment, research, and other information related to the nervous system and the special senses.

SUGGESTED ACTIVITIES

- Ask students to begin a resource file by collecting pictures, articles, and occupational information related to the nervous system and the special senses.

D. Provide students with unit.

E. Discuss unit and specific objectives.

- Discuss how accomplishment of the specific objectives leads to mastery of the unit objective.
- Emphasize the health careers related to the nervous system and the special senses.
- Prepare a bulletin board or scrapbook with pictures of persons in different health occupations that relate to the nervous system or the special senses.
- Discuss the need for background knowledge of the general anatomy and physiology of the nervous system for all health occupations.

F. Individualize instruction to meet learning needs and interests of students.

G. Discuss information and assignment sheets.

1. Use Information Sheet, Section I, to introduce students to terms and definitions associated with the nervous system.
   - Use Supplement #1 to help students learn terms.
   - Illustrate your discussion of the terms *nerve* and *neuron* with Transparencies #1 and #2.
   - Have students complete Supplement #2.
2. Use Information Sheet, Section II, to discuss the main functions of the nervous system.
3. Use Information Sheet, Section III, to discuss the divisions of the nervous system.
   - Be sure to stress that there is only one nervous system in the human body and that these classifications are *parts* of that system.
4. Use Information Sheet, Section IV, to discuss the major parts of the brain.
   - Use Transparency #3 to illustrate the discussion.
   - Use the brain Anamod to provide students with a "hands-on" model.
   - Have students complete Assignment Sheet #1 for review.

SUGGESTED ACTIVITIES

5. Use Information Sheet, Sections V and VI, to discuss the functions of the cerebral cortex and different parts of the brain.

    - Illustrate your discussion with Transparencies #4 through #6.

    - Give examples of body functions that would be affected by damage to different parts of the brain or cerebral cortex.

      EXAMPLE: Damage to occipital lobe of cerebrum could cause blindness.

    - Have students complete Supplements #3 and #4.

6. Use Information Sheet, Section VII, to discuss the ways in which the central nervous system is protected.

7. Use Information Sheet, Section VIII, to discuss the cranial nerves and their functions.

    - Use Transparency #7 to illustrate your discussion.

    - Have students complete Supplements #5 and #6.

    - Help students memorize the cranial nerves by using the following mnemonic device:

      On **O**ld **O**lympus' **T**owering **T**op, **A** **F**in **A**nd **G**erman **V**iewed **S**ome **H**ops.

      Talk about the mental image suggested by the mnemonic device to help fix the sentence in students' minds.

8. Use Information Sheet, Sections IX and X, to discuss the components of the spinal cord and the names and locations of the spinal nerves.

    - Illustrate your discussion with Transparency #8.

    - Have students complete Assignment Sheets #2 and #3 for review.

    - Help students memorize the numbers and names of the spinal nerves by using the following memory device:

      OLd **OP**ticians **OC**cupy **T**hemselves **TRY**ing **A**pples **F**rom **AU**tumn **G**ardens' **V**ery **S**pecial **H**arvest.

      Talk about the mental image suggested by the mnemonic device to help fix the sentence in students' minds.

9. Use Information Sheet, Sections XI and XII, to introduce students to the sensory system and its organs.

10. Use Information sheet, Sections XIII through XV, to discuss the eye and its accessory structures.

SUGGESTED ACTIVITIES

- Illustrate your discussion with Transparencies #9 through #11.
- Have students complete Supplements #7 and #8.
- Have students complete Assignment Sheet #4 for review.
- Use eye Anamod to provide students with "hands-on" model.
- Show film *The Eye*. Discuss film with the class.

11. Use Information Sheet, Sections XVI and XVII, to discuss the ear.
    - Illustrate your discussion with Transparency #12.
    - Have students complete Supplements #9 and #10.
    - Show film *Inner Ear*. Discuss film with the class.
    - Use ear Anamod to provide students with "hands-on" model.
    - Have students complete Assignment Sheet #5 for review.
12. Use Information Sheet, Section XVIII, to discuss the senses of taste, smell, and touch.
    - Use Transparencies #13 and #14 to illustrate your discussion.
    - Have students complete Supplements #11-#13.
    - Have students complete Assignment Sheet #6 for review.
    - Distribute copies of the *National Geographic* articles on the sense of smell. Discuss the article with the students and allow them to complete the olfactory test that accompanies the article.
13. Use Information Sheet, Section XIX, to discuss the education and duties of health occupations related to the nervous system and special senses.
    - Provide students with Supplements #14 and #15 for future references.
    - Have students identify a health occupation that interests them and is related to the nervous system or the special senses; then have them give an oral report to the class on that occupation.
    - Arrange for field trips to observe job tasks performed by professionals in various related health occupations.
    - Ask a panel of individuals from related health occupations to visit the class to discuss their specialties, the education involved, and the typical salaries.

H. Review material and give test.

SUGGESTED ACTIVITIES

I. Critique test and discuss in class.

J. Reteach and retest if necessary.

K. Complete appropriate section of students' competency profiles.

III. Unit references

A. Anthony, Catherine Parker, and Gary A. Thibodeau. *Anatomy and Physiology Laboratory Manual*, 11th ed. St. Louis: The C.V. Mosby Company, 1983.

B. Anthony, Catherine Parker, and Gary A. Thibodeau. *Structure & Function of the Body*, 7th ed. St. Louis, Missouri: Times Mirror/Mosby College Publishing, 1984.

C. Boyles, Marcia V., Margaret K. Morgan, and Mary H. McCaulley. *The Health Professions*. Philadelphia: W.B. Saunders Company, 1982.

D. Dox, Ida, Biagio John Melloni, and Gilbert M. Eisner. *Melloni's Illustrated Medical Dictionary*. Baltimore: The Williams & Wilkins Company, 1979.

E. Hood, Gail Harkness, and Judith R. Dincher. *Total Patient Care: Foundations & Practice*, 6th ed. St. Louis: The C.V. Mosby Company, 1984.

F. Lenn, Robin C. *Structure and Functions of the Body: Study Guide*. St. Louis, Missouri: Times Mirror/Mosby College Printing, 1984.

G. Miller, Benjamin F., and Claire Brackman Keane. *Encyclopedia and Dictionary of Medicine, Nursing, and Allied Health*, 3rd ed. Philadelphia: W.B. Saunders Company, 1983.

H. *The Nurse's Reference Library: Diagnostics*. Springhouse, Pennsylvania: *Nursing82* Books, Intermed Communications, Inc., 1982.

I. Prendergast, Alice. *Medical Terminology: A Text/Workbook*, 2nd ed. Menlo Park, California: Addison-Wesley Publishing Company, Medical/Nursing Division, 1983.

NERVOUS SYSTEM
UNIT IV

SUPPLEMENT #1 — NERVOUS SYSTEM CROSSWORD PUZZLE

Use the clues below and your information sheet to test your knowledge of terms and definitions associated with the nervous system.

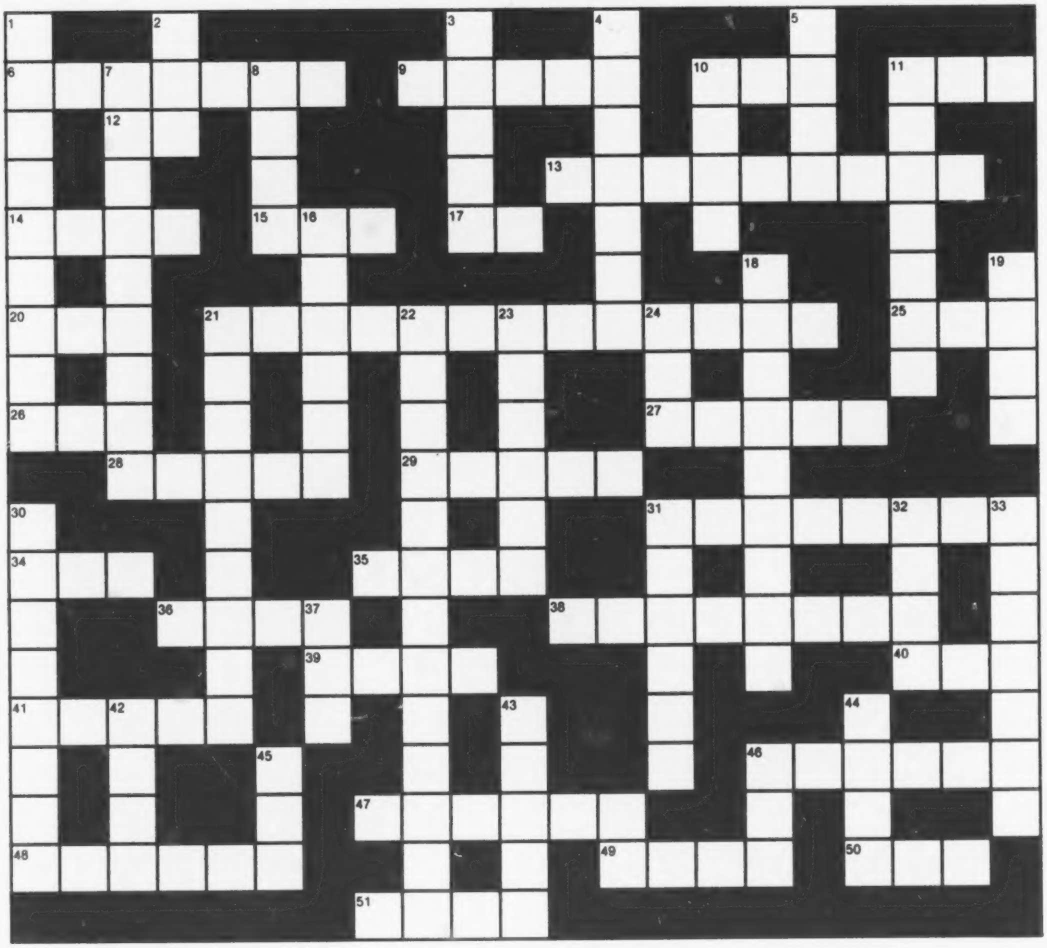
ACROSS

6. The twelve pairs of nerves that carry impulses to and from the brain
9. Cavity in the bone in which the eye is located
10. Definite article
11. Central nervous system (abbr)
12. You and me
13. Pertaining to sense of smell
14. To urge on or poke
15. Autonomic nervous system (abbr)
17. Negative reply
20. Also
21. Brain, spinal cord, and nerves that work together to coordinate body activities
25. Organ of hearing
26. Hawaiian flower necklace
27. Pertaining to the eye
28. Structures that contain spinal nerves
29. Number of vagus nerve
31. Anything that produces a response or increase in activity in living matter
34. Dine
35. What may happen if the sense of balance is lost
36. Organ of smell
38. Mass of nerve tissue
39. Mimic
40. Baglike organ or structure
41. Brash and brazen
46. Part of eye that contains sight receptors (rods and cones)
47. Organ of taste
48. Chambers
49. Part of body containing brain
50. Prefix meaning *muscle*
51. Organs of sight

DOWN

1. One of the lobes of the cerebral hemisphere
2. Peripheral nervous system (abbr)
3. That part of central nervous system contained within the cranium
4. Study of the ear and its diseases
5. Opposite of cold sensation
7. Nervous system that lies on either side of spinal cord
8. Space or region
10. Saline secretion of lacrimal glands
11. Ear wax
16. Neurons
18. The brain contains four of these
19. Area of spinal cord containing cell bodies
21. Study of the nervous system and its diseases
22. Study of the eye and its diseases
23. Part of 28 Across
24. Standing room only (abbr)
30. Tough membranes that cover brain and spinal cord
31. There are five major ones
32. Part of eye that focuses images on retina
33. Part of 31 Down
37. Emergency Medical Technician (abbr)
42. Flightless bird
43. Tenth cranial nerve
44. Another word for *medulla oblongata*
45. Belonging to it
46. Sight receptor in retina

SUPPLEMENT #1



NERVOUS SYSTEM
UNIT IV

SUPPLEMENT #2 — IDENTIFY THE PARTS OF A NEURON

NAME ______________________________ DATE ______________

Use this supplement to broaden your knowledge of the nervous system. Additional references may be needed to find the answers.

Label the parts of the neuron in the illustration below. Write your answers in the blanks provided.

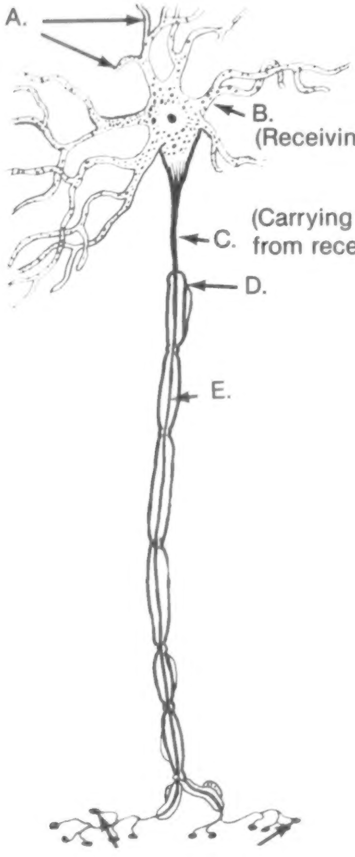
A. ____________________

B. ____________________

C. ____________________

D. ____________________

E. ____________________



(Carrying impulses to receiving center)

(Receiving center)

(Carrying impulses away from receiving center)

Motor End Plates

NERVOUS SYSTEM
UNIT IV

SUPPLEMENT #3 — IDENTIFY THE LOBES OF THE CEREBRAL HEMISPHERE

NAME ______________________________ DATE ______________

Use this supplement to broaden your knowledge of the nervous system.

Label the lobes of the cerebral hemisphere illustrated below. Write your answers in the blanks provided.

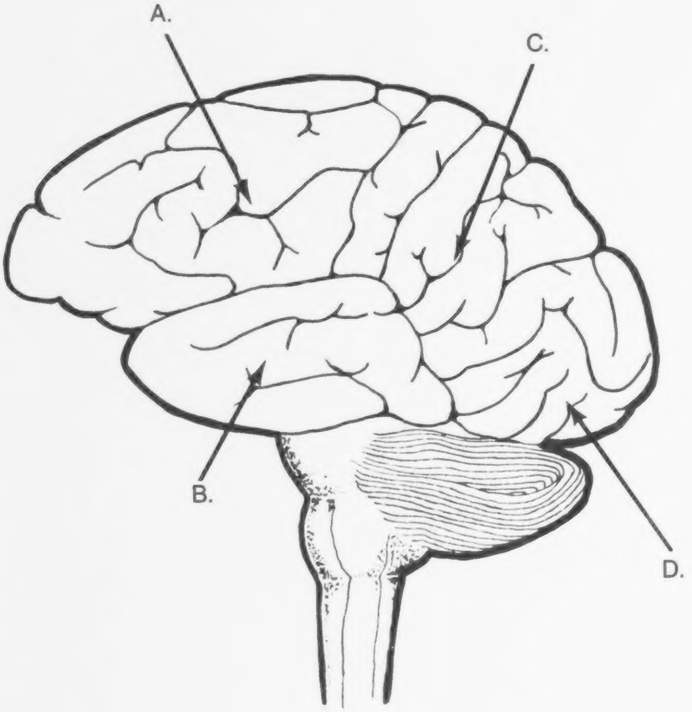
A. ______________________________

B. ______________________________

C. ______________________________

D. ______________________________

E. Which lobe is not shown? ______________________________



NERVOUS SYSTEM
UNIT IV

SUPPLEMENT #4 — IDENTIFY THE FUNCTIONAL AREAS OF THE BRAIN

NAME ____ DATE ________________

Use this supplement to broaden your knowledge of the nervous system.

Label the functional areas of the brain illustrated below. Write the correct numbers in the blanks.

_____A. Visual area

_____B. Auditory area

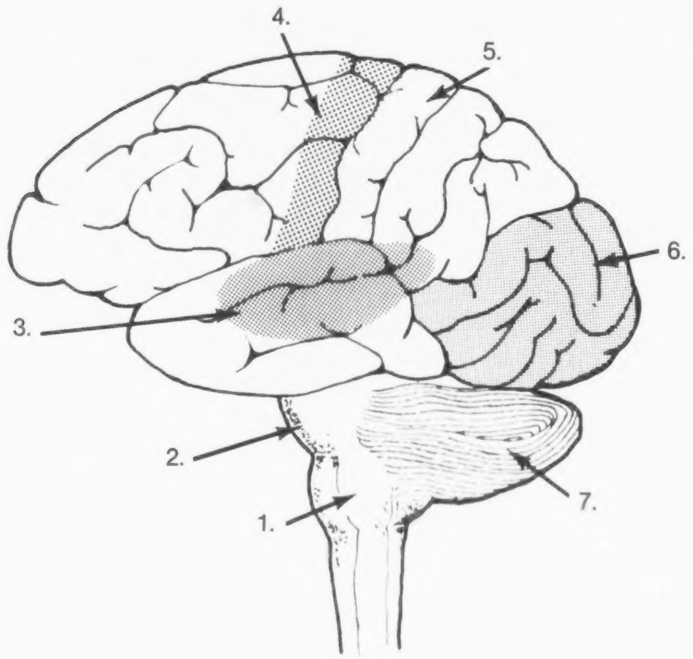
_____C. Motor area

_____D. Sensory area

_____E. Cranial nerves V through VIII area

_____F. Cranial nerves IX through XII area

_____G. Balance, equilibrium, coordination, and muscle tone area



NERVOUS SYSTEM
UNIT IV

SUPPLEMENT #5 — CRANIAL NERVES CROSSWORD PUZZLE

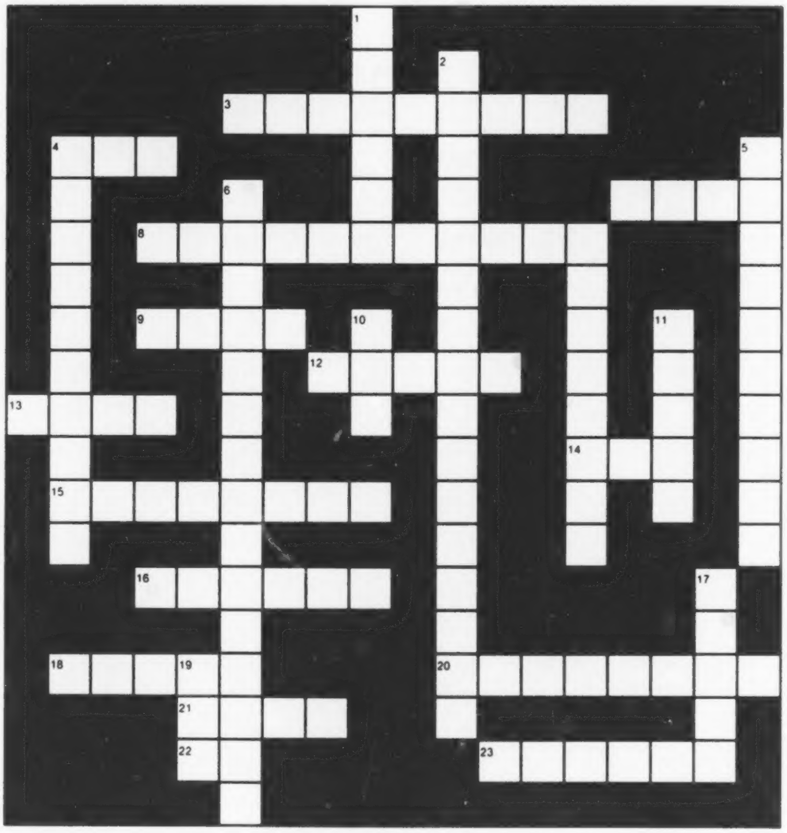
How well can you remember the names and spellings of the cranial nerves? Do you remember the numbers associated with these nerves? Test your recall ability by using the following clues to complete the cranial nerves crossword puzzle below.

ACROSS

3. IV
4. Optic
7. II
8. XII
9. Glossopharyngeal
12. Auditory
13. Trigeminal
14. Ace
15. VI
16. Spinal accessory
18. X
20. VIII
21. Trochlear
22. Either, ____
23. Hypoglossal

DOWN

1. VII
2. IX
4. V
5. III
6. XI
7. I
10. Abducens
11. Facial
17. Oculomotor
19. Unidentified flying object (abbr)



NERVOUS SYSTEM
UNIT IV

SUPPLEMENT #6 — TEST CRANIAL NERVES

I. Equipment and materials needed

  A. Substance for testing sense of smell

  B. Snellen eye chart or printed page with various sizes of letters

  C. Pin or other sharp instrument

  D. Warm and cold objects (a small metal object works well as it can be easily heated and cooled)

  E. Items to taste—Salt, sugar, and something bitter such as quinine

II. Test procedure

  A. Olfactory nerve — Test for smell having partner close each side of nose with finger while testing other side

  B. Optic nerve — Test partner with eye chart or have partner read a printed page of varying size of printed letters

  C. Oculomotor nerve — Test by raising partner's upper eyelid and by having partner turn eyes from side to side without turning head

  (NOTE: Damage to third nerve also may cause blurred or double vision.)

  D. Trochlear nerve — Test by having partner turn eyes up and then turn eyes from side to side without moving head

  E. Trigeminal nerve

    1. Test motor function by asking your partner to clench teeth

    2. Test sensory function by checking face for reaction to pain and temperature

    (NOTE: Injury to one part of the fifth nerve may cause loss of sensation in the cornea and conjunctiva, which can be tested only with special equipment.)

  F. Abducens nerve -- Have partner turn eyes from side to side without moving head

  (NOTE: There are six muscles that control eye movements. They perform as prime mover and antagonist; that is, when one contracts, its opposite relaxes.)

SUPPLEMENT #6

G. Facial nerve

  1. Test motor function by having partner wrinkle forehead, frown, whistle, and close eyelids tightly

  2. Test sensory function by having partner taste sugar, salt, and quinine or some other bitter substance

H. Auditory nerve

  1. Test hearing function by observing your partner's ability to hear a whispered voice

     a) Have partner stand fifteen feet from examiner

     b) Have partner cover ear closest to examiner with hand to see if examiner's whisper can be heard with the uncovered ear

  2. Test equilibrium or balance function

     a) Ask the partner to raise arms straight out to the side

     b) Have partner touch index fingers together, first with eyes open and then with eyes closed

     (NOTE: Normally, a person should be able to touch the fingers together as well with the eyes closed as with the eyes open.)

I. Glossopharyngeal nerve

  1. Test taste on posterior one-third of tongue

  2. Test ability to swallow

J. Accessory nerve

  1. Test trapezius muscle by having partner raise shoulders against resistance to examiner's hands

  2. Test sternocleidomastoid muscle by having partner turn head to right and to left against resistance of examiner's hands

K. Hypoglossal nerve — Test by having partner protrude tongue

(NOTE: Normally, the tongue will protrude in the midline.)

L. Change roles and repeat tests

M. Discuss results with your partner and the class

N. Clean test area and return equipment and materials to proper storage

NERVOUS SYSTEM
UNIT IV

SUPPLEMENT #7 — THE EYE AND ACCESSORY STRUCTURES CROSSWORD PUZZLE

Test your ability to remember terms and definitions associated with the eye and its accessory structures by completing the crossword puzzle on the next page. Use the clues below and your information sheet. Numbers 51 across and 10 and 20 down have already been completed.

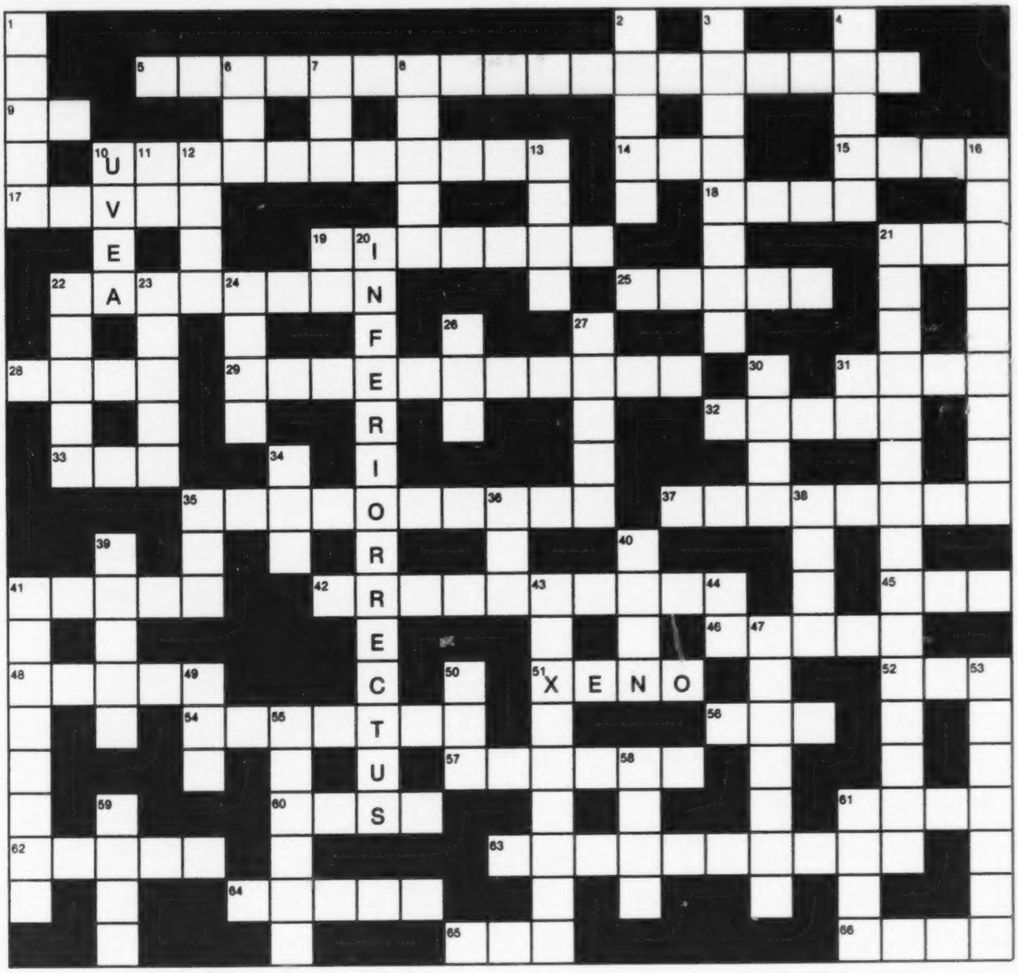
ACROSS

5. Component that holds lens in place (2 wds)
9. Prefix meaning *eye*
10. Upper levator (2 wds)
14. United Arab Republic (abbr)
15. Paul Newman's eye color
17. Umbilicus scar
18. Pigmented part of eye
19. Muscle that controls lens shape
20. Mimic
21. Large, tailless monkey
22. Mass of nerve tissue
25. With 3 Down the structure that secretes tears
28. Saline secretion of lacrimal glands
29. Lower levator (2 wds)
31. Cake and coffee affairs
32. May be aqueous or vitreous
33. Born
35. Nerve that controls part of eye muscles
37. Jellylike humor that maintains shape of eyeball
41. Vision
42. Three-branched nerve that supplies cornea and conjunctiva
45. Weep
46. Eye pad worn by pirates
48. Another name for the ear's auricle (a red herring in this puzzle on the eye)
51. Prefix meaning *strange* or *foreign*
52. First three letters of alphabet
54. Eyelid muscle
56. Blood Urea Nitrogen (abbr)
57. White protective layer of eyeball
60. Abbreviation for *system*
61. Posterior in lay language
62. Pertaining to the eye
63. One of the cranial trigeminal nerves
64. Vision receptors found in retina
65. Opposite of *wet*
66. Looked

DOWN

1. Eye color
2. Skull cavity
3. Gland that secretes tears
4. Some drawer pulls
6. Look
7. Organ of vision
8. Hard, tough metal
10. Iris, ciliary body, and choroid
11. Physical education (abbr)
12. Stopper
13. Opposite of *light*
16. Hairs on the edge of the eyelid
19. Company (abbr)
20. Muscle that abducts eyeball (2 wds)
21. Space between cornea and iris that holds aqueous humor (2 wds)
22. Eye color common to redheads
23. Neuron
24. Pharmaceutical company with Eli; flower
26. Rapid eye movement (abbr)
27. "Color" of cornea
30. Structure that carries tears to nasal passage
31. Preposition
34. Play on words
35. Pertaining to the study of the eye
36. One of the digits of the foot
38. The part of a plant below the ground
39. Extreme pain and suffering
40. Later
41. Opposite of *inferior*
43. One of the three trigeminal nerves
44. Long playing (abbr)
47. Watery, transparent humor
49. Amyotrophic lateral sclerosis (abbr)
50. Physicians (abbr)
53. Middle vascular layer that supplies oxygen and nutrients
55. Sight
58. Vision receptors found in retina
59. Eye infection
61. Uncommon

SUPPLEMENT #7



NERVOUS SYSTEM
UNIT IV

SUPPLEMENT #8 — MEASURE VISUAL ACUITY

i. Equipment needed

A. Snellen eye chart

B. Rule

C. Tape

D. 3 × 5 card

E. Chair

F. Pencil or pen for recording results

II. Procedure

A. Measure a spot on the floor 20 feet from wall on which chart will hang

B. Mark distance with a piece of tape and place chair at this location

C. Hang chart and adjust so that the 20-foot line on chart is at subject's eye level when subject is seated in chair

D. Have subject sit in chair; instruct subject to remove eyeglasses, if necessary, and cover left eye with 3 × 5 card

E. Ask subject to begin with an upper line of letters and read the lines down as far as possible

(NOTE: Encourage subject to try to read lines that he or she cannot see clearly, because intelligent guesses usually indicate that the patient can recognize some of the symbol's details.)

F. Record visual acuity as a fraction, the numerator (top number) being the distance from the chart, and the denominator (bottom number) being the distance on the chart line at which a normal eye can read the line; if the subject makes an error on a line, record the results with a minus number

EXAMPLE: Subject reads 20/40 line but makes one error: record subject's vision as 20/40 -1

Visual acuity of right eye = ______________________________

G. Have subject cover right eye, and repeat test with left eye; however, to minimize recall, have subject read the lines backward (right to left); record results

Visual acuity of left eye = ______________________________

SUPPLEMENT #8

H. If subject wears glasses, test subject's corrected vision, using same procedure; record results

Visual acuity of right eye (with glasses) = ______________________________

Visual acuity of left eye (with glasses) — ______________________________

I. Interpret results and discuss with subject

1. Persons who can read the 20/20 line on the Snellen chart are considered to have normal vision
2. If the denominator is more than 20, the subject's vision is less than normal

   EXAMPLE: 20/40 vision means that the subject reads at 20 feet what a person with normal vision can read at 40 feet
3. A person with 20/60 vision or less in the best corrected eye is said to be partially sighted
4. A person with 20/200 vision or less in the best corrected eye is said to be legally blind
5. If the denominator is less than 20, the subject's visual acuity is better than normal

   EXAMPLE: 20/15 vision means that the subject reads at 20 feet what a person with normal vision can see at 15 feet

J. Return equipment to proper storage

NERVOUS SYSTEM
UNIT IV

SUPPLEMENT #9 — THE EAR CROSSWORD PUZZLE

How many of the terms and definitions associated with the ear can you remember? Find out by using the clues below and your information sheet to complete the ear crossword puzzle on the next page.

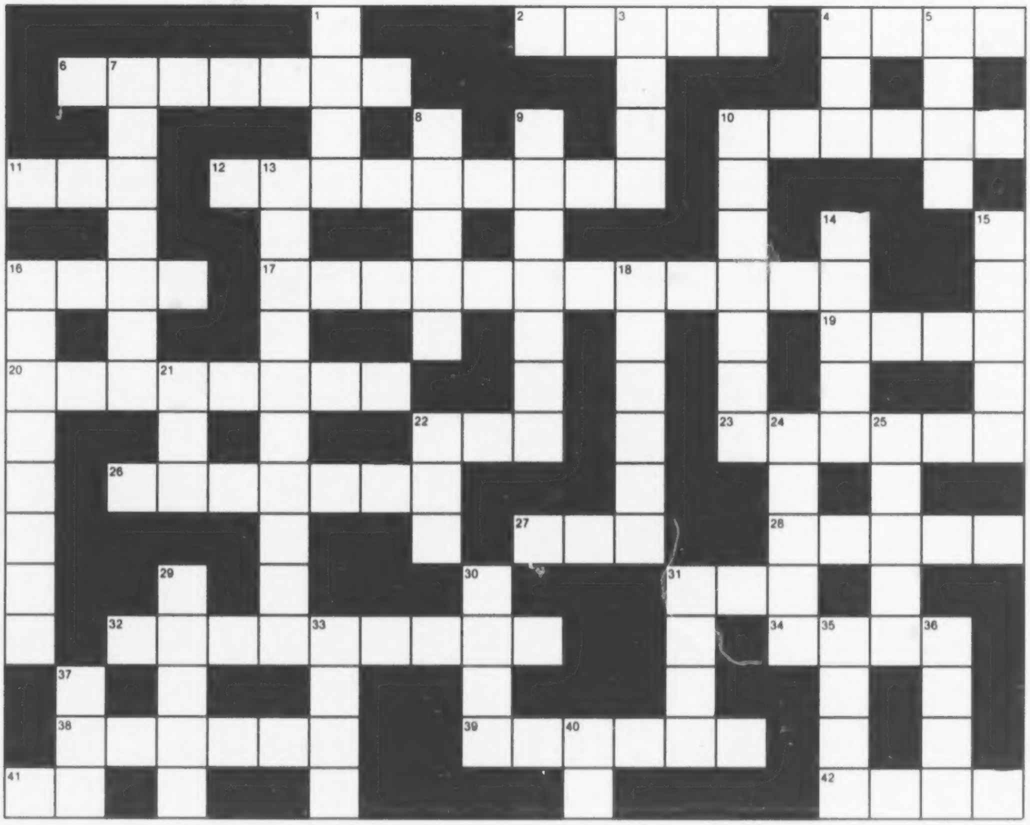
ACROSS

2. Section of ear that contains auricle and auditory canal
4. What one feels with a middle ear infection
6. Ear wax
10. Section of ear that contains ossicles
11. Organ of hearing
12. Space in inner ear that controls sense of position
15. Past tense of tear
16. Ripped
17. With 18 Down, fluid-filled passages that control equilibrium
19. Organization of Petroleum Exporting Countries (abbr)
20. Partner of 16 Down
22. Grief
23. Ossicle housed in oval window
26. Snail-shaped structure that contains organ of Corti
27. Belonging to it
28. Section of ear containing semicircular canals
31. To recline
32. Air vibration
34. Unable to hear
38. Partner of 29 and 30 Down
39. Hear
41. Exist
42. Grow weary

DOWN

1. More or ...
3. Partner of 13 Down
4. Hearing appliance worn by those who are hard of hearing
5. Word of distress
7. Tympanic membrane
8. Shy
9. Pinna
10. One of the ossicles
13. Structure that regulates middle ear pressure to match that outside the eardrum
14. Smell
15. One of the ossicles
16. Eardrum
18. See 17 Across
21. Sound of disapproval
22. Cerumen
24. Attempted
25. Auricle
29. Opening in middle ear covered by secondary tympanic membrane
30. Opening that leads from middle ear to vestibule of inner ear; houses stapes
31. Part of ear to which an earring is attached
33. Opposite of *up*
35. Opposite of *entrance*
36. Fright
37. To be indebted
40. Hush!

SUPPLEMENT #9



NERVOUS SYSTEM
UNIT IV

SUPPLEMENT #10 — TEST HEARING

I. Equipment

  A. Low-frequency tuning fork (256 or 512 hertz)

  B. Watch with a sweep second hand

II. Procedure

(NOTE: The Rinne test that you are about to perform tests both bone and air conduction of sound. However, the results of this test are not definitive because they depend on subjective factors, such as the examiner's ability to strike the fork with equal force each time, and the patient's ability to report audible tones. Any abnormal test results require confirmation by pure tone audiometry.)

  A. Practice achieving a consistent tone with the tuning fork

    1. Hold fork at its base so that prongs may vibrate freely

    2. Activate tuning fork by gently striking one prong against your elbow or the heel of your hand, by stroking prongs upward, or by pinching them together

    3. Touch base of vibrating forks to the top of your skull

    4. Compare the intensity of sound you hear with one or both ears open—then closed (close with a finger or a cotton ball)

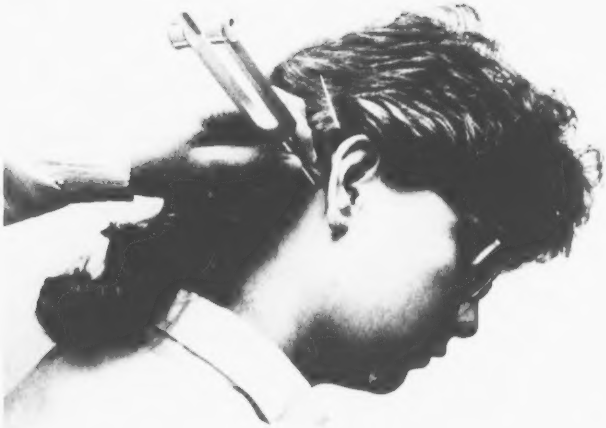
  B. Establish hand signals so that subject can indicate whether tone is louder in the right ear or left ear, and also when the tone can no longer be heard

  C. Instruct subject to close the right ear with a finger or cotton ball

  D. Test bone conduction of sound by holding base end of vibrating tuning fork firmly against mastoid process of subject's left temporal bone (See Figure A)

SUPPLEMENT #10

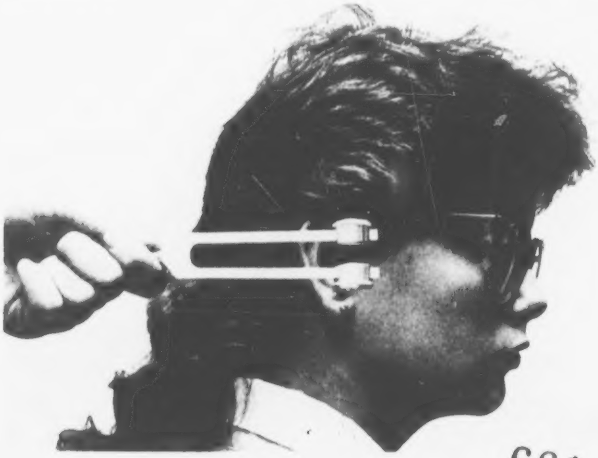
FIGURE A



E. When subject indicates that the sound disappears (bone conduction of sound ceases), immediately place the vibrating prongs of fork close to external left ear (Figure B)

(NOTE: The subject should be able to hear the sound again by air conduction. In a person with middle-ear deafness, the malleus, incus, and stapes are often at least partially fused and do not move properly when sound waves traveling through air hit the tympanic membrane. Such an individual will not be able to hear sound when the tuning fork is removed from the mastoid process.)

FIGURE B



SUPPLEMENT #10

F. Have subject indicate when the sound can no longer be heard; note results

G. Repeat process for right ear

H. Record results as *Rinne positive* if air-conducted sound persists twice as long as bone-conducted sound

I. Record results as *Rinne negative* if bone-conducted sound persists as long or longer than air-conducted sound

(NOTE: In the Rinne test, hearing the bone-conducted tone for a longer duration than the air-conducted tone indicates a conductive loss. Hearing the air-conducted tone twice as long as the bone-conducted tone, with reduced duration of both tones, suggests sensorineural loss.)

J. Retest subject if abnormal results are obtained

K. If abnormal results are again obtained, refer subject for further audiologic testing

L. Return tuning fork to proper storage

NERVOUS SYSTEM
UNIT IV

SUPPLEMENT #11 — TEST SENSE OF SMELL AND REACTION OF TASTE BUDS

I. Equipment and materials

  A. Cane sugar solution (about 2 tsp sugar to ½ cup water)

  B. Paper cups of water for rinsing mouth

  C. Sodium chloride (salt) solution (about 2 tsp salt to ½ cup water)

  D. Lemon juice

  E. 0.1% quinine solution

  F. Cotton swabs

  G. Peeled and sliced pieces of raw potato, onion, and apple

  H. Rose

  I. Cinnamon or cloves

  J. Perfume

  K. Liquid bleach

  L. Old, worn tennis shoe

  M. Sulphur

  N. Earth (soil)

II. Procedure

(NOTE: These experiments with taste and smell should help you answer the following questions: 1) Do the same kinds of stimuli activate all taste receptors [taste buds]? 2) What is the pattern of distribution of the taste receptors? and 3) Does the sense of smell contribute to the sense of taste?)

  A. Dip cotton swab into sugar solution

  B. At intervals of a few seconds, moisten successively the tip, sides, and back of your outstretched tongue and roof of your mouth; record results

Tip of tongue ______________________________

Sides of tongue ______________________________

Back of tongue ______________________________

Roof of mouth ______________________________

SUPPLEMENT #11

C. Repeat with salt solution, lemon juice, and quinine solution, rinsing your mouth with clear water after each; record results

1. Salt solution

   Tip of tongue ______

   Sides of tongue ______

   Back of tongue ______

   Roof of mouth ______

2. Lemon juice

   Tip of tongue ______

   Sides of tongue ______

   Back of tongue ______

   Roof of mouth ______

3. Quinine solution

   Tip of tongue ______

   Sides of tongue ______

   Back of tongue ______

   Roof of mouth ______

D. Analyze your results and answer the following questions

1. Do the same kinds of stimuli activate all taste receptors (taste buds)?

   ______

2. What is the pattern of distribution of the taste receptors?

   Sweet — ______

   Salt — ______

   Sour — ______

   Bitter — ______

SUPPLEMENT #11

Sour — ______________________________

Bitter — ______________________________

E. Ask your partner to close the eyes and pinch the nostrils closed

F. Place in sequence small, approximately equal-sized pieces of potato, onion, and apple on the tongue, asking your partner to identify each piece of food by its taste alone; note results

G. Repeat procedure, but this time allow partner to leave nostrils open; note results

H. Analyze the results and answer the questions below

1. Could your partner identify all three food items with the nostrils pinched closed?

2. Could your partner identify all three food items with the nostrils open?

3. What conclusion can you draw about the senses of smell and taste?

I. Test your partner's sense of smell by having partner close eyes and react to the smell of each of the following substances; record results

Substance	No Odor	Weak Odor	Strong Odor	Pleasant Odor	Unpleasant Odor
1. Rose	☐	☐	☐	☐	☐
2. Cinnamon or cloves	☐	☐	☐	☐	☐
3. Perfume	☐	☐	☐	☐	☐
4. Liquid bleach	☐	☐	☐	☐	☐
5. Old, worn tennis shoe	☐	☐	☐	☐	☐
6. Sulphur	☐	☐	☐	☐	☐
7. Earth	☐	☐	☐	☐	☐

SUPPLEMENT #11

J. To show how the sense of smell is closely related to the emotions, ask your partner to relate which of the odors evoked a vivid memory

K. Change roles with your partner and repeat the test, introducing the odors in the last test in a different order

L. Discuss your results with your partner and the class

M. Clean test area and return materials to proper storage

NERVOUS SYSTEM
UNIT IV

SUPPLEMENT #12 — TEST REFLEXES

I. Equipment needed—Percussion hammer

II. Test procedure

A. Test plantar reflex by stroking outer side of sole of foot with a blunt instrument (handle of hammer) from heel to toe

(NOTE: The normal reaction should be the flexion of the great toe. An abnormal reaction would be the extension of the great toe with a fanning spread of the other toes. This extensor reflex is called the *Babinski reflex*.)

B. Test ankle jerk reflex by tapping Achilles tendon with flat side of percussion hammer

(NOTE: The normal reaction should be extension of the ankle followed by flexion. An abnormal reaction would be an absent or exaggerated action.)

C. Test knee jerk or patellar reflex by tapping knee just below patella while subject is seated

(NOTE: The normal reaction should be the extension of the lower leg. An abnormal reaction would be absent or exaggerated action.)

D. Discuss your results with your partner and the class

NERVOUS SYSTEM
UNIT IV

SUPPLEMENT #13 — RESEARCH AND ANSWER QUESTIONS ABOUT THE NERVOUS SYSTEM

NAME ______________________________ DATE ______________

This supplement is designed to allow you to go one step further and look at the nervous system in more depth and detail. In addition to this unit of instruction, you will need to refer to medical textbooks and dictionaries. Gather your outside resources, and then answer the following questions as completely as possible.

A. Write brief definitions for the following words:

1. Afferent — ______________________________
2. Efferent — ______________________________
3. Synapse — ______________________________
4. Dendrites — ______________________________
5. Axon — ______________________________
6. Norepinephrine — ______________________________
7. Cholinergic fibers — ______________________________
8. Proprioceptors — ______________________________
9. Neuraglia — ______________________________
10. Diencephalon — ______________________________

B. What general functions does the nervous system perform? ______________________________

SUPPLEMENT #13

C. What general function does the spinal cord perform?

D. Would a person be blind, deaf, or neither if both of his eighth cranial nerves were atrophied?

E. Explain briefly why most old people are farsighted.

F. Identify each of the following:

1. Interneuron —
2. Motoneuron —
3. Babinski's reflex —
4. Sensory neuron —
5. Somatic neuron —
6. Spinal ganglion —
7. Shingles —
8. Gray matter —

G. What is the fight-or-flight syndrome?

H. What general function does the autonomic nervous system perform?

I. List the three types of autonomic effector tissues.

J. List in sequence the three principal layers of the eyeball from superficial to deep.

SUPPLEMENT #13

K. Define *visual acuity.* ______

L. Discuss the Snellen test for visual acuity and explain how results of the test are reported and interpreted.

M. List the anatomical divisions of the ear.

N. Define *kinesthetic.* ______

O. If you had to swallow a bitter pill, you would probably taste its bitterness less if you placed it in which of the following locations? Circle the number of the correct answer.

1. The tip of your tongue
2. The side of your tongue
3. The back of your tongue

P. What is the root word that refers to the ear? ______

Q. What is the root word that refers to the eye? ______

R. What is each of the following?

1. Organ of Corti — ______
2. Crista ampullaris — ______
3. Macula — ______
4. Rinne test — ______
5. Blind spot (optic disk) — ______

SUPPLEMENT #13

6. Sheath of Schwann — ______________________________

7. Myelin sheath — ______________________________

S. List four diseases that affect the nervous system.

____

____

____

____

NERVOUS SYSTEM
UNIT IV

SUPPLEMENT #14 — DISEASES AND DISORDERS OF THE NERVOUS SYSTEM AND THE SPECIAL SENSES

DISEASE OR DISORDER	DESCRIPTION
ALTERED STATES OF AWARENESS	
Coma	Patient is in an abnormally deep sleep and cannot be aroused by any external stimuli. Coma may result from brain disorders, metabolic disorders, or functional or psychic disorders.
Confusion (disorientation)	Damage to cerebral cortex changes mental status. Patient has poor memory, inability to think clearly, and impaired perception. Patient may make mistakes in identifying people or may misinterpret conversations. Disorientation to time and place may be an early indication of confusion.
Delirium	Symptom of some major distortion of cerebral function and may result from infections causing high temperatures, toxic conditions, or brain disorders. Characterized by progressive disorientation to time, place, and finally, persons. Frequently involves misinterpretation of visual and auditory stimuli. For example, patients may see snakes, worms, or bugs crawling over the bed and may hear voices that are not there. Patient may become combative and agitated or may withdraw and become secretive.
Hyperthermia and hyperpyrexia (Abnormal body temperature elevation)	May occur in patients with neurologic disease caused by malfunction of the temperature regulatory center in the hypothalamus. May cause additional brain damage; cardiac arrest or heart irregularities may occur with sudden or excessive cooling.
Seizures/convulsions	*Convulsion* refers to involuntary muscle contractions that occur during a seizure; *seizure* refers to the entire event. Seizures represent some disturbance of cerebral function in which there is a sudden, excessive, and disorderly discharge of electric impulses from the nerve cells.
Stupor	Patient is lethargic and apathetic. The sense of feeling and degree of responsiveness are diminished. Stimuli may arouse patient momentarily, but patient will then lapse immediately into sleep.
DISEASES AND DISORDERS OF THE NERVOUS SYSTEM	
Infectious Diseases	
Central nervous system syphilis	Lesions caused by the syphilis organism (*Treponema pallidum*) develop in the central nervous system and cause a wide variety of complex neurologic conditions. The three forms of neurologic disorders most frequently encountered are meningovascular syphilis, tabes dorsalis, and general paresis.

SUPPLEMENT #14

DISEASE OR DISORDER	DESCRIPTION
Encephalitis	An acute febrile illness with evidence of involvement of brain tissue. Residual neurologic disorders may follow encephalitis, including a slowly developing Parkinsonian syndrome.
Meningitis	Inflammation of the meninges that cover the brain and spinal cord. Diagnosis is made through analysis of cerebrospinal fluid, including culture smear examination to determine causative organism.
Poliomyelitis (infantile paralysis)	Acute infectious disease caused by three different viruses. Affects the motor cells of the spinal cord and brain stem.
Degenerative Diseases	
Amyotrophic lateral sclerosis (ALS)	A progressive degenerative disorder of the motor neuron of the spinal cord, brain stem, and motor cortex resulting in muscular weakness and atrophy. Affects primarily men between the ages of 40 and 60 years. The cause is unknown. Death usually results from pneumonia or respiratory failure.
Huntington's chorea	Hereditary disorder of the basal ganglia and cerebral cortex. Characterized by rapid, jerky movements and mental deterioration. There is no specific treatment, and death generally occurs about 15 years after onset.
Multiple sclerosis	Chronic disease of the nervous system. The disease affects the myelin sheaths, resulting in numerous areas of demyelinization of nerve fibers in the spinal cord and brain. Later, patches of sclerotic nerve fibers (plaques) develop at these sites. The life-span after onset varies widely, but has been estimated to average from 13 years to more than 25 years.
Myasthenia gravis	Fairly uncommon disease that is neurologic only to extent that a deficiency in neuromuscular transmission exists at a point where a motor nerve joins a skeletal muscle, causing a weakened contraction of the muscle. The person with this disease has either too little acetylcholine (substance that carries nerve impulses from nerve fiber to muscle) or too much cholinesterase (enzyme that inactivates acetylcholine). Disease can be fairly well controlled with drugs, although there is no cure.
Parkinson's disease	Chronic progressive disease that affects the basal ganglia, a group of nerve cell bodies located deep within the cerebral hemisphere. Is considered one of the most common neurological disorders of the aged, with the first symptoms becoming apparent between ages 50 and 60. Disease often leads to complete dependence. The cause of Parkinson's disease is unknown.
Bell's paralysis (Bell's palsy)	Affects branches of cranial nerve VII, the facial nerve. The condition may begin with slight pain and tenderness at back of ear and on side of neck, followed by paralysis of the muscles on one side of face. The eye cannot close, the mouth is pulled to opposite side of face, and drooling occurs. There may be an increase of lacrimation from the eyes. More than 80 percent of the patients with this condition recover without residual effects after a few weeks.

SUPPLEMENT #14

DISEASE OR DISORDER	DESCRIPTION
Cerebrovascular accident (CVA, apoplexy, stroke)	Cerebrovascular disease continues to be the third leading cause of death in the United States. The three major causes are cerebral thrombosis, cerebral hemorrhage, and cerebral embolus. Symptoms and neurologic signs vary considerably. Headache, vomiting, and convulsions may occur.
Epilepsy	Recurrent episodes of disturbances in cerebral functioning resulting in seizures, loss of consciousness, and abnormal sensory or behavioral manifestations. Causes may include metabolic disturbances, congenital malformations, and neurologic conditions of the cerebral cortex. Condition can usually be controlled.
Neuritis and neuralgia	Neuritis and neuralgia describe a variety of pains associated with the peripheral nerves. Neuritis refers to nerve damage from tumors, infection, trauma, vascular and metabolic disorders, and toxic agents. Diffuse damage that occurs to many nerves is called *polyneuritis* or *multiple neuritis*. Neuritis and neuralgia result in degenerative changes in both the peripheral sensory and motor nerve fibers.
Rupture of intervertebral disk	When these flattened disks of cartilage between adjacent vertebrae rupture, the soft, gelatinous substance in their centers escapes and compresses the spinal cord or exerts pressure on nerves, causing neurologic symptoms.
Spinal cord injury	Results in loss of sensory and motor function. The injury may result in complete transection of the cord, resulting in complete paralysis and loss of sensation below the level of injury or in partial transection, resulting in less extensive paralysis and loss of sensation. An injury to the cervical region may result in quadriplegia; whereas, an injury in the thoracic or lumbar region may result in paraplegia.
Tumors of brain or spinal cord	All brain tumors, whether benign or malignant, are potentially fatal unless treated. Symptoms of intracranial tumors are caused by localized destruction or compression of brain tissue and vary according to location of the tumor. Spinal cord tumors occur less frequently than those involving the brain, and the majority are benign. Symptoms of spinal cord tumors vary depending on the level and the location of the tumor. Neurologic symptoms develop below the level of the tumor and cause both sensory and motor changes.
REFRACTIVE ERRORS OF THE EYE	
Astigmatism	Defect in the curvature of the eyeball surface, usually the cornea, but sometimes the lens. Light rays do not bend equally, and the individual suffers from eyestrain and blurred vision. Eyeglasses must be worn to correct vision.

SUPPLEMENT #14

DISEASE OR DISORDER	DESCRIPTION
Hyperopia (farsightedness)	In persons with this defect, the light rays do not bend sharply enough or soon enough to focus the object on the retina, and the point of focus is behind the retina. The individual can see distant objects clearly, but near objects are blurred.
Myopia (nearsightedness)	Caused by defect in the eyeball, or in the bending of light rays. The rays are brought into focus too soon, or in front of the retina. A surgical technique has been developed that corrects the defect by changing the curvature of the eye.
Strabismus	Condition in which the eyes fail to focus in the same direction. *Convergent strabismus* causes the eye to turn in toward the nose; *divergent strabismus* causes the eye to turn outward. Unless treated, may cause irreversible damage to vision.
DISEASES AND DISORDERS OF THE EYE	
Inflammatory and infectious disorders	
Blepharitis	Chronic inflammatory process involving margin of both eyelids. May be caused by bacteria, allergy, and degenerative diseases.
Conjunctivitis	Inflammation of the conjunctiva of the eye, resulting from bacteria, injury, or allergy.
Corneal ulcers	May result from trachoma, injury, or extension of infection from conjunctiva, and may be present in keratitis. Can cause permanent damage and loss of vision if untreated.
Iritis	Inflammation of the uveal tract involving only the iris and ciliary body. May cause blindness if untreated. Cause is unknown.
Keratitis	Inflammation of the cornea; cause is not known. Causes pain, sensitivity to light, lacrimation, eyelid spasms, and redness with inflammation.
Styes (hordeola)	Small boils or abscesses resulting from infection in the hair follicle of an eyelash. Characterized by a small inflamed swelling at edge of eyelash.
Trachoma	Communicable disease that begins with inflammation of conjunctiva, which becomes chronic and is accompanied by the formation of granules on the lids. The disease progresses slowly, with changes in the conjunctival tissue and a tendency to form corneal ulcers. The disease ultimately leads to blindness.
Uveitis	Inflammation of the uveal tract (tracts between ciliary body, iris, and choroid). May cause blindness if untreated. Cause is unknown.

SUPPLEMENT #14

DISEASE OR DISORDER	DESCRIPTION
Noninfectious eye disorders	
Cataract	Slowly progressive disorder in which there is an opacity of the lens of the eye. Since light must pass through the lens to reach the retina, any opacity impairs vision. The disorder may occur at any age and may be caused by injury, allergy, aging, systemic diseases such as diabetes, or congenital factors. Surgery can be performed to restore normal vision.
Detached retina	The retina becomes detached from choroid, which supplies its blood supply. Injuries, disease, or degeneration may cause small holes or tears to occur in the retina. When this happens, vitreous humor from the large chamber in the back of the eye seeps between the retina and the choroid, causing the two layers to separate. Surgical reattachment is generally successful.
Diabetic retinopathy	A complication of diabetes mellitus that involves noninflammatory vascular changes in the retina. It is the leading cause of new blindness in those under age 60. There is no treatment for this condition, but the progression of this complication can be delayed.
Glaucoma	May occur as a primary condition without any known cause, or may be secondary to other disorders. The disease causes an increase in the intraocular pressure within the eye. Continued pressure may cause damage to the optic nerve. There is no cure for glaucoma, but early diagnosis and treatment prevent blindness and help control intraocular pressure.
Retrolental fibroplasia	Disease of premature infants caused by excessive use of the oxygen supply in the incubator. The disease results in partial or total blindness and is the most common cause of blindness in infants.
DISEASES AND DISORDERS OF THE EAR	
External ear	
Infections	Boils in auditory canal are common and may recur unless properly treated. Fungus infections occur rarely. Various forms of dermatitis may cause infection of external ear.
Middle ear	
Mastoiditis	Complication of acute purulent otitis media that may require surgery for treatment.
Otitis media	Formation of abscess in middle ear, which is affected by infections that reach it through eustachian tube and through nose and throat. There is danger of otitis media infection extending to mastoid process.

SUPPLEMENT #14

DISEASE OR DISORDER	DESCRIPTION
Otosclerosis	New growth of bone that causes footplate of stapes to become fixed in oval window, preventing sound from reaching inner ear; there is no known medical treatment, but surgery restores hearing in 90 percent of persons with this disorder.
Inner ear	
Labyrinthitis	Inflammatory condition of inner ear that may result from extension of infection from middle ear; treatment is usually with antibiotics and bed rest.
Meniere's syndrome	Caused by increased pressure in inner ear; severe vertigo is primary symptom, accompanied by nausea, vomiting, and ringing ears. Treatment may be medical or surgical.

Adapted by permission from Hood, Gail Harkness, and Dincher, Judith R.: Total Patient Care: Foundations & Practice, ed. 6, St. Louis, 1984, The C.V. Mosby Co.

NERVOUS SYSTEM
UNIT IV

SUPPLEMENT #15 — DIAGNOSTIC TESTS USED TO ASSESS THE NERVOUS SYSTEM AND SPECIAL SENSE ORGANS

The nervous system is the body's most highly organized and complex system. Diagnosis of diseases and disorders of the nervous system includes a careful and thorough history and neurologic examination, as well as special tests and diagnostic procedures. A physician, known as a neurologist, usually performs the neurologic examination and determines what special tests and procedures must be performed. Many of these tests are performed by or assisted by specially trained technicians. Sophisticated equipment and techniques are being developed every day to help assess the nervous system.

DIAGNOSTIC TEST	RELATED OCCUPATION	DESCRIPTION	PURPOSE
Nervous system			
Brain scan	Nuclear technician	Solution of radioactive material is injected intravenously, and after 4 hours, a Geiger counter or scintillator is used to determine uptake	Diagnosis of brain tumors (they tend to retain the radioactive material)
Caloric test	Physician	Cold or hot water is allowed to drip into ear and is stopped the moment patient complains of dizziness or nausea, or if physician observes any symptoms; if no signs or symptoms occur with 3 minutes, irrigation is stopped	Evaluation of equilibrium by testing vestibular branch of eighth cranial nerve. Lesions in brain stem and cerebellum can also be differentiated entated
Cerebral angiography (arteriography)	Physician and x-ray technician	Injection of radiopaque substance into artery of arm or neck, followed by x-ray examination of head as substance circulates in arterial system	Location of lesions such as cerebral aneurysms, tumors, or ruptured blood vessels (NOTE: Neurologic symptoms may increase after procedure, or the patient may have a delayed allergic reaction to the dye.)

SUPPLEMENT #15

DIAGNOSTIC TEST	RELATED OCCUPATION	DESCRIPTION	PURPOSE
Cisternal puncture	Physician performs, nurse monitors	Short-beveled needle is inserted just below occipital bone into cisterna magna (NOTE: Cisternal puncture is often the procedure of choice on small children. Some physicians prefer it to lumbar puncture because headache is not as common following cisternal puncture.)	Laboratory examination of spinal fluid
Computed tomography (CAT scan)	X-ray technician	Three-dimensional view of brain obtained by directing a narrow beam of x rays through brain from one side of head, and interpreting changes in density from that of normal brain tissue	Diagnosis of intracranial lesions and abnormalities; monitoring of effects of surgery, radiotherapy, or chemotherapy on intracranial tumors
Echoencephalography	EEG/EMG technician	Ultrasonic pulses are beamed through head in temporoparietal region, and a recording is made of returning echoes	Information on position of midline of brain, and detection of cerebral masses that may cause shifts from the midline
Electroencephalography (EEG)	EKG/EEG technician	Electrodes are placed at specified locations on each side of subject's scalp to pick up and provide a graphic recording of the brain's electrical activity	Determination of the presence and type of epilepsy; diagnosis of intracranial lesions; evaluation of brain's electrical activity in metabolic disease, head injury, meningitis, encephalitis, and mental retardation; confirmation of brain death
Electromyography	EEG/EMG technician	Electrodes are applied to skin's surface, or needle electrodes are inserted into the muscle, to provide a graphic recording of muscles' electrical activity	Detection of dysfunction of motor neuron, the neuromuscular junction, or muscle fibers

SUPPLEMENT #15

DIAGNOSTIC TEST	RELATED OCCUPATION	DESCRIPTION	PURPOSE
Lumbar puncture	Physician performs, nurse monitors	Cerebrospinal fluid is drawn by inserting small needle between third and fourth lumbar vertebrae, which is below level where spinal cord ends	Laboratory examination of spinal fluid
Myelography	Physician and x-ray technician	X-ray examination of spinal cord following injection of air or dye through a lumbar puncture	Identification of tumors of the spinal cord or ruptured intervertebral discs
Pneumoencephalography (air encephalography)	Physician and x-ray technician	Introduction of air into subarachnoid space after removal of small amounts of cerebrospinal fluid through lumbar or cisternal puncture followed by x-ray examination	Visualization of ventricular and subarachnoid space for abnormal shape or position
Queckenstedt's test	Physician performs, nurse monitors	Lumbar puncture is performed with a needle to which a manometer is attached, and cerebrospinal fluid pressure is measured while digital pressure is applied to jugular veins of neck	Measure cerebrospinal fluid pressure when physician suspects partial or complete blockage of fluid circulation as a result of spinal tumor or following dislocation or fracture of vertebrae
Ventriculography	Physician and x-ray technician	Similar to pneumoencephalography except that air is introduced through small burr holes (openings) in skull directly into lateral ventricles (NOTE: This procedure is performed in the operating room.)	Visualization of ventricular and subarachnoid spaces for abnormal shape or position
Evaluation of eye			
Amsler's grid test	Ophthalmic medical assistant; optometrist	Patient is instructed to cover one eye, and to wear any corrective lenses normally worn, while staring at a dot centrally located on a grid; patient should be able to see dot and straight lines on grid	Detection of scotomas or blind spots on the macula, and evaluation of stability or progression of macular disease; used as screening device and followed with more detailed visual testing

SUPPLEMENT #15

DIAGNOSTIC TEST	RELATED OCCUPATION	DESCRIPTION	PURPOSE
Exophthalmometry	Ophthalmic medical assistant; optometrist	Instrument called an ophthalmometer measures forward protrusion of eye	Evaluation of increase or decrease in condition known as *exophthalmos*, the abnormal outward protrusion of the eye seen in thyroid diseases and other conditions that displace the eye in the orbit
Fluorescein angiography	Ophthalmic medical assistant; optometrist	Sodium fluorescein is injected intravenously and multiple photographs of fundus are taken using special camera	Examination of microvascular structures of retina
Ocular ultrasonography	Ophthalmic medical assistant; optometrist	Transmission of high-frequency sound waves through eye, and measurement of their reflection from ocular structures	Viewing a fundus that is clouded by a cataract or a vitreous hemorrhage; measuring length of eye and curvature of cornea in preparation for surgery; locating lesions within the eye or orbit
Ophthalmoscopy	Ophthalmic medical assistant; optometrist	Visualization of vascular and nerve tissue in fundus of eye, including optic disc, retinal vessels, macula, and retina	Identification of changes in blood vessels in eye and detection of tumors and other diseases of the eye
Snellen's chart eye examination	Ophthalmic medical assistant; optometrist	Patient reads chart composed of rows of letters arranged in various sizes and based on what the person with normal vision can read at 20 feet from chart	Evaluation of visual acuity
Tangent screen examination	Ophthalmic medical assistant; optometrist	Patient fixes eyes on target on screen and test objects are then brought from periphery into field of vision, with patient signaling when object is first seen	Determination of loss of vision in the central visual field; location of brain lesion (NOTE: The ability to see only half of the visual field is called *hemianopia* and occurs following cerebrovascular accident.)

SUPPLEMENT #15

DIAGNOSTIC TEST	RELATED OCCUPATION	DESCRIPTION	PURPOSE
Tonometry	Ophthalmic medical assistant; optometrist	Instrument is placed on center of cornea (after the cornea is anesthetized) and scale reading is taken	Measurement of intraocular pressure and detection of diseases such as glaucoma
Evaluation of ear			
Electronystagmography	Audiologist	Examiner records eye movements in response to various stimuli, including hot and cold water	Determination of presence and location of lesion in vestibule of ear; to help identify cause of dizziness, vertigo, or ringing ears; and to help diagnose unilateral hearing loss of unknown origin
Falling and past-pointing tests	Audiologist	In the falling test, the patient is observed while standing with feet together, standing on one foot, standing heel to toe, and walking backwards and forwards heel to toe, each time with eyes open and then with eyes closed; swaying or falling indicates dysfunction In past-pointing test, patient is instructed to reach out and touch examiner's index finger, then to lower arm, close eyes and touch finger again; degree of direction of past pointing is observed	Dysfunction in vestibule of ear and cerebellum of brain that may result in dizziness, loss of equilibrium, or involuntary movement of eyeball
Pure tone audiometry	Audiologist	Patient wears earphones that are attached to audiometer, which produces tones of varying pitch and intensity; patient signals when sound is heard	Determination of presence, type, and degree of hearing loss
Rinne test	Audiologist	Tuning fork is vibrated and placed on patient's mastoid process and then just before outer ear	Determining whether deafness is conductive or whether disease of nerve is present

NERVOUS SYSTEM
UNIT IV

ANSWERS TO SUPPLEMENTS

Solution to Supplement #1 — Nervous System Crossword Puzzle

1 O			2 P						3 B			4 O				5 H				
6 C	R	7 A	N	I	8 A	L		9 O	R	B	I	T		10 T	H	E		11 C	N	S
C		12 U	S		R				A			O		E		A		E		
I		T			E				I		13 O	L	F	A	C	T	O	R	Y	
14 P	R	O	D		15 A	16 N	S		17 N	O		O		R				U		
I		N				E						G			18 V			M		19 G
20 T	O	O		21 N	E	R	V	22 O	U	23 S	S	Y	24 S	T	E	M		25 E	A	R
A		M		E		V		P		P			R		N			N		A
26 L	E	I		U		E		H		I			27 O	P	T	I	C			Y
		28 C	O	R	D	S		29 T	E	N	T	H			R					
30 M				O				H		A			31 S	T	I	M	U	32 L	U	33 S
34 E	A	T		L			35 F	A	L	L			E		C			E		P
N			36 N	O	S	37 E		L			38 G	A	N	G	L	I	O	N		E
I				G		39 M	I	M	E				S		E			40 S	A	C
41 N	E	42 R	V	Y		T		O		43 V			E				44 S			I
G		H			45 I			L		A			S		46 R	E	T	I	N	A
E		E			T		47 T	O	N	G	U	E			O		E			L
48 S	P	A	C	E	S			G		U		49 H	E	A	D		50 M	Y	O	
							51 E	Y	E	S										

ANSWERS TO SUPPLEMENTS

Supplement #2

A. Dendrites
B. Cell body
C. Axon
D. Neurilemma (Sheath of Schwann
E. Myeline sheath

Supplement #3—

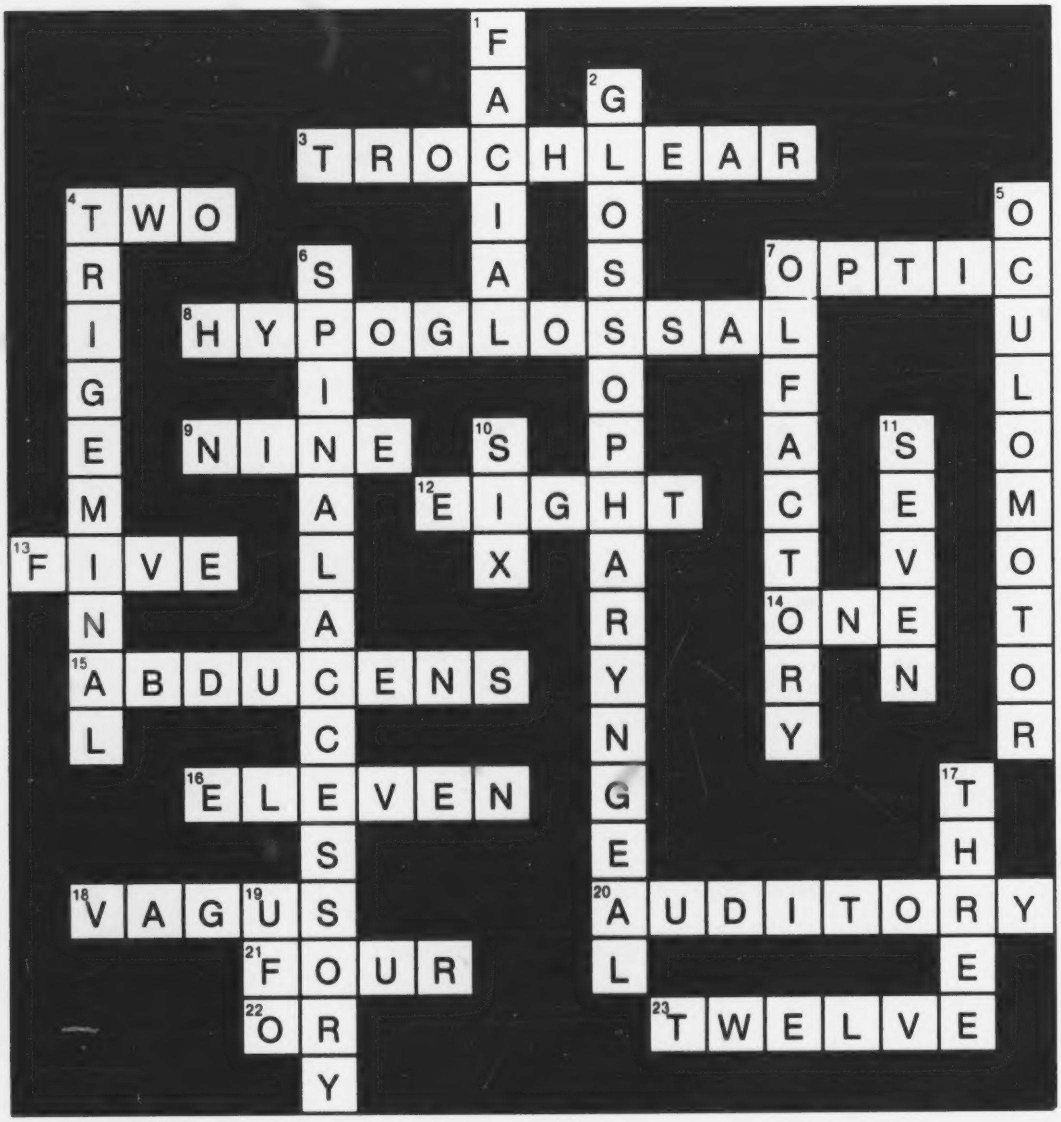
A. Frontal
B. Temporal
C. Parietal
D. Occipital

Supplement #4

A. 6
B. 3
C. 4
D. 5
E. 2
F. 1
G. 7

ANSWERS TO SUPPLEMENTS

Solution to Supplement #5 — Cranial Nerves Crossword Puzzle



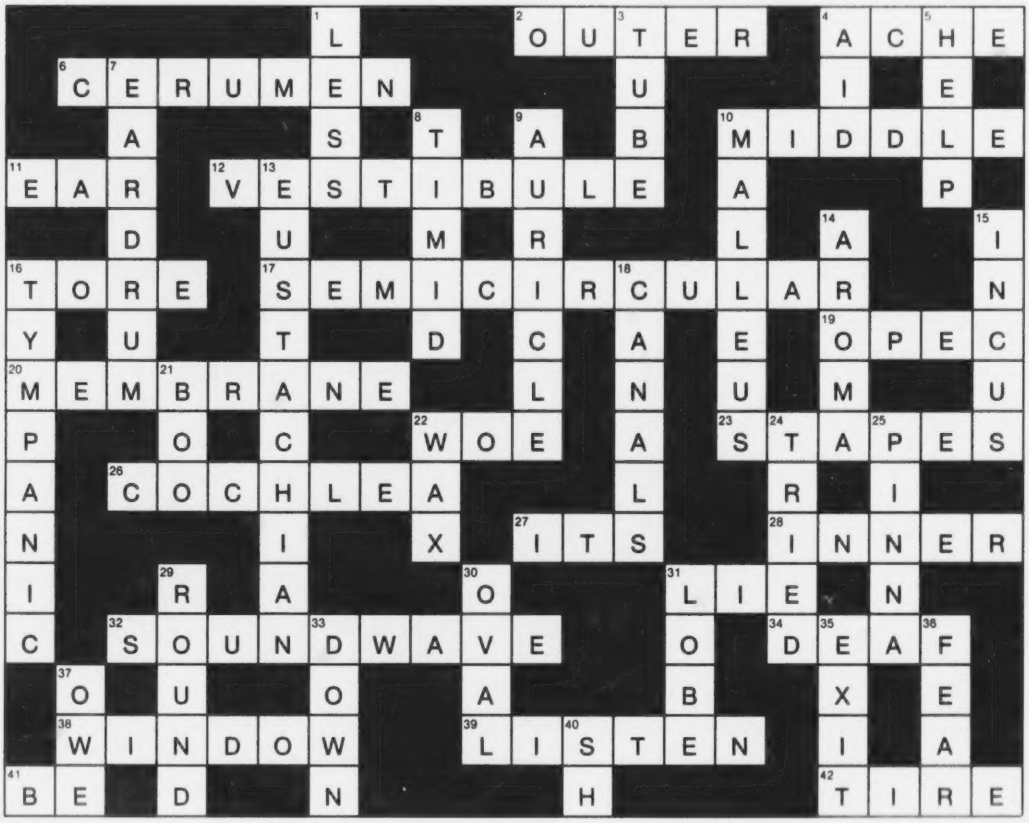
ANSWERS TO SUPPLEMENTS

Solution to Supplement #7 — The Eye and Accessory Structures Crossword Puzzle

1 B														2 S		3 L			4 K			
R			5 S	U	6 S	P	7 E	N	8 S	O	R	Y	L	I	G	A	M	E	N	T		
9 O	P				E		Y		T					N		C			O			
W		10 U	11 P	12 P	E	R	E	Y	E	L	I	13 D		14 U	A	R			15 B	L	U	16 E
17 N	A	V	E	L					E			A		S		18 I	R	I	S			Y
		E		U			19 C	20 I	L	I	A	R	Y			M				21 A	P	E
	22 G	A	23 N	G	24 L	I	O	N				K		25 G	L	A	N	D		N		L
	R		E		I			F		26 R			27 C			L				T		A
28 T	E	A	R		29 L	O	W	E	R	E	Y	E	L	I	D		30 D		31 T	E	A	S
	E		V		Y			R		M			E			32 H	U	M	O	R		H
	33 N	E	E			34 P		I					A				C			I		E
				35 O	C	U	L	O	M	O	36 T	O	R		37 V	I	T	38 R	E	O	U	S
		39 A		P		N		R			O			40 A				O		R		
41 S	I	G	H	T			42 T	R	I	G	E	43 M	I	N	A	44 L		O		45 C	R	Y
U		O						E				A		O		46 P	47 A	T	C	H		
48 P	I	N	N	49 A				C		50 D		51 X	E	N	O		Q			52 A	B	53 C
E		Y		54 L	E	55 V	A	T	O	R		I				56 B	U	N		M		H
R				S		I		U		57 S	C	L	E	58 R	A		E			B		O
I		59 S				60 S	Y	S	T			L		O					61 R	E	A	R
62 O	P	T	I	C		I					63 M	A	N	D	I	B	U	L	A	R		O
R		Y			64 C	O	N	E	S			R		S			S		R			I
		E				N				65 D	R	Y							66 E	Y	E	D

ANSWERS TO SUPPLEMENTS

Solution to Supplement #9 — The Ear Crossword Puzzle



■	■	■	■	■	■	1 L	■	■	■	2 O	U	3 T	E	R	■	4 A	C	5 H	E
■	6 C	7 E	R	U	M	E	N	■	■	■	■	U	■	■	■	I	■	E	■
■	■	A	■	■	■	S	■	8 T	■	9 A	■	B	■	10 M	I	D	D	L	E
11 E	A	R	■	12 V	13 E	S	T	I	B	U	L	E	■	A	■	■	■	P	■
■	■	D	■	■	U	■	■	M	■	R	■	■	■	L	■	14 A	■	■	15 I
16 T	O	R	E	■	17 S	E	M	I	C	I	R	18 C	U	L	A	R	■	■	N
Y	■	U	■	■	T	■	■	D	■	C	■	A	■	E	■	19 O	P	E	C
20 M	E	M	21 B	R	A	N	E	■	■	L	■	N	■	U	■	M	■	■	U
P	■	■	O	■	C	■	■	22 W	O	E	■	A	■	23 S	24 T	A	25 P	E	S
A	■	26 C	O	C	H	L	E	A	■	■	■	L	■	■	R	■	I	■	■
N	■	■	■	■	I	■	■	X	■	27 I	T	S	■	■	28 I	N	N	E	R
I	■	■	29 R	■	A	■	■	■	30 O	■	■	■	31 L	I	E	■	N	■	■
C	■	32 S	O	U	N	33 D	W	A	V	E	■	■	O	■	34 D	35 E	A	36 F	■
■	37 O	■	U	■	■	O	■	■	A	■	■	■	B	■	■	X	■	E	■
■	38 W	I	N	D	O	W	■	■	39 L	I	40 S	T	E	N	■	I	■	A	■
41 B	E	■	D	■	■	N	■	■	■	■	H	■	■	■	■	42 T	I	R	E

ANSWERS TO SUPPLEMENTS

Supplement #13

A.
1. *Afferent*—Neurons that transmit impulses *to* central nervous system
2. *Efferent*—Neurons that transmit impulses *from* central nervous system to periphery
3. *Synapse*—Point of contact between adjacent neurons
4. *Dendrites*—Branched, treelike part of nerve cell that transmits impulses *toward* cell body
5. *Axon*—Nerve cell process that transmits impulses *away from* cell body
6. *Norepinephrine*—Neurotransmitter of most sympathetic and postganglionic neurons; also a neurohormone released in response to hypotension. It produces an increase in heart rate, vasoconstriction, and elevation of blood pressure
7. *Colinergic fibers*—Axons whose terminals release acetylcholine
8. *Proprioception*—Sense of position or movement
9. *Neuralgia*—Severe pain along course of a nerve
10. *Diencephalon*—parts of brain between cerebral hemisphere and midbrain

B. Coordination of all body activities

C. Conducting impulses to and from brain

D. Deaf

E. Lenses lose their elasticity and can no longer bulge enough to bring near objects into focus

F.
1. *Interneuron*—Neuron between primary afferent neuron and final motor neuron
2. *Motoneuron*—Another name for motor or efferent neurons
3. *Babinski's reflex*—Flexion of the big toe and fanning of the other toes when the sole of the foot is scraped
4. *Sensory neuron*—Afferent neuron
5. *Somatic neuron*—Both sensory and motor nerves supplying muscle and somatic tissue
6. *Spinal ganglion*—The ganglion on the posterior root of each spinal nerve
7. *Shingles*—Herpes zoster
8. *Gray matter*—Unmyelinated nerve fibers of cerebral cortex

G. Increased secretion of adrenalin by adrenal medulla in response to stress; primitive response of sympathetic nervous system that prepares the individual for "fight or flight"

H. Regulates the body's automatic or involuntary functions

I. Cardiac muscle tissue, smooth muscle tissue, and glandular epithelial tissue

J. Sclera, choroid, retina

K. The ability of the eye to discriminate detail; sharpness of vision

ANSWERS TO SUPPLEMENTS

L. The Snellen eye chart has letters of varying sizes that can be identified by persons with normal vision at specific distances from the chart. The subject stands 20 feet from chart, alternately covers one eye, and reads the lines of letters. If the subject can read correctly at 20 feet the line designated to be read at 20 feet, the subject has 20/20 vision. The formula used to determine visual acuity is $V = d/D$ where V equals vision, d equals distance from chart, and D equals distance that same letters could be read by normal eye (number designated on chart line)

M. Outer, middle, inner

N. Another name for proprioception or one's sense of position and movement

O. 1

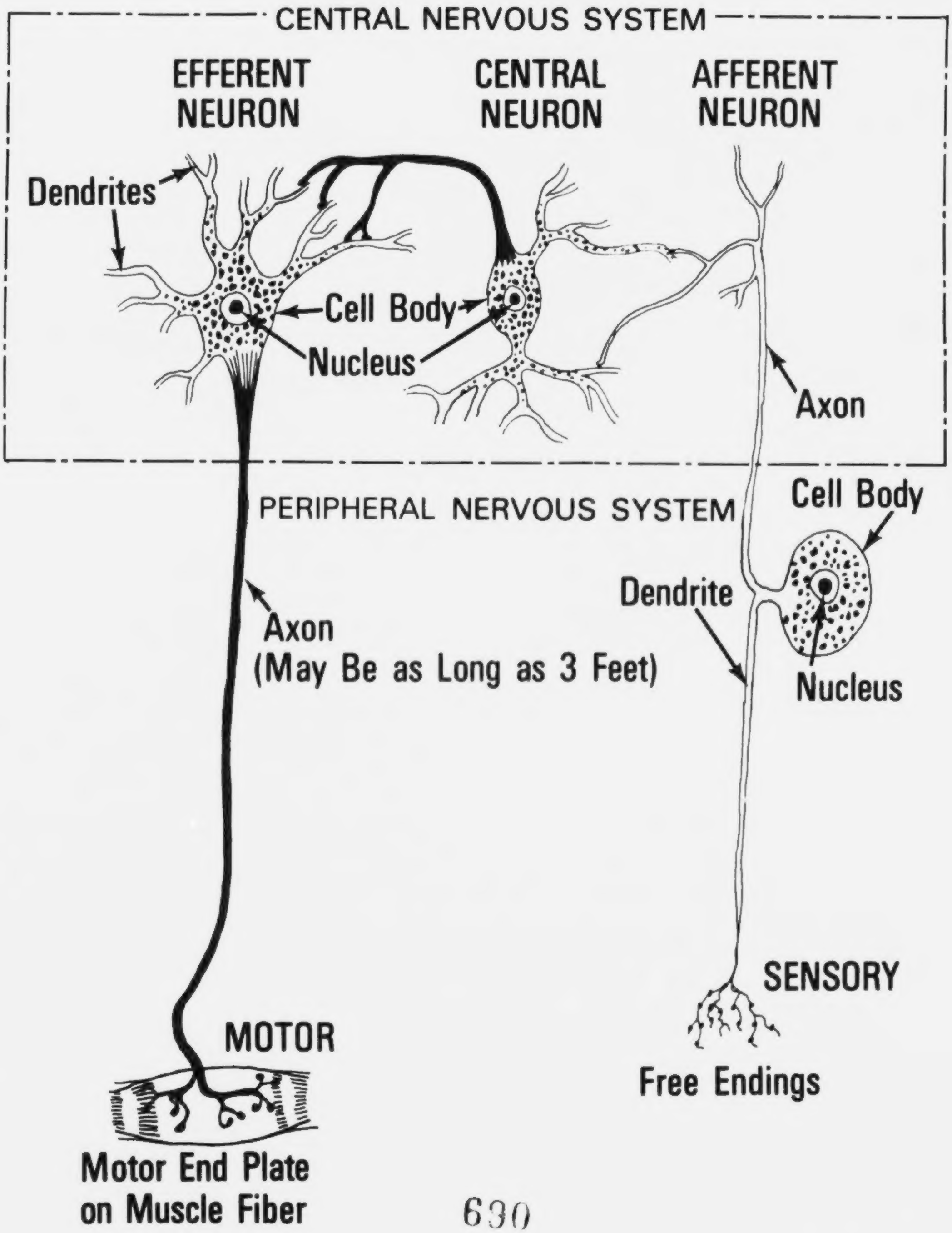
P. Oto

Q. Oculo

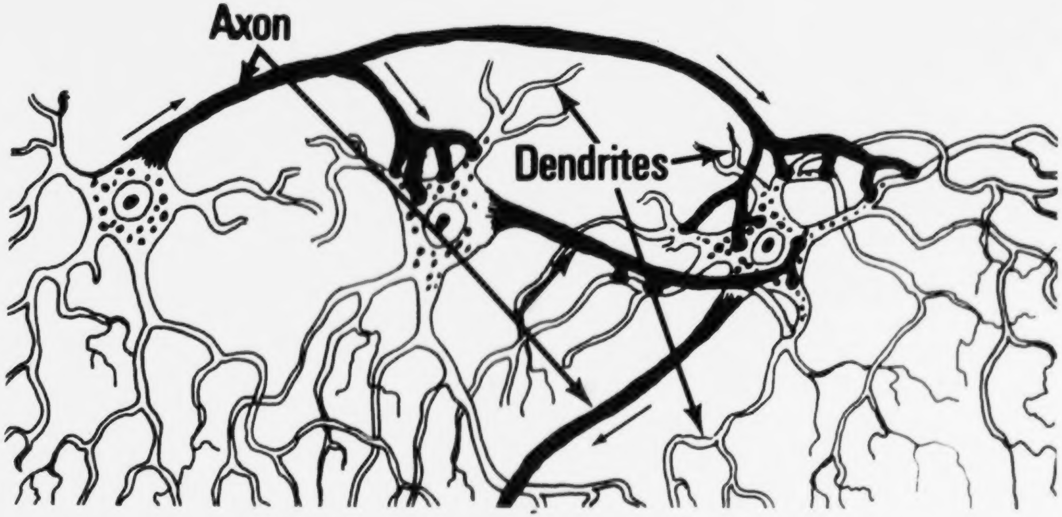
R.
1. *Organ of Corti*—Organ in cochlea containing hearing receptors
2. *Crista ampullaris*—Expanded ends of the semicircular canal of ear
3. *Macula*—Area distinguishable by color from its surroundings; often refers to the macular retinae
4. *Rinne test*—Test of hearing made with tuning forks
5. *Blind spot (optic disk)*—Place where the optic nerve enters the eyeball
6. *Sheath of Schwann*—Plasma membrane of Schwann cell covering peripheral nerve
7. *Myelin sheath*—Lipid substance covering axons of certain nerve fibers

S. Huntington's chorea, neuralgia, shingles, stroke, epilepsy, trigeminal neuralgia

Sensory, Connecting, and Motor Neurons



A Synapse

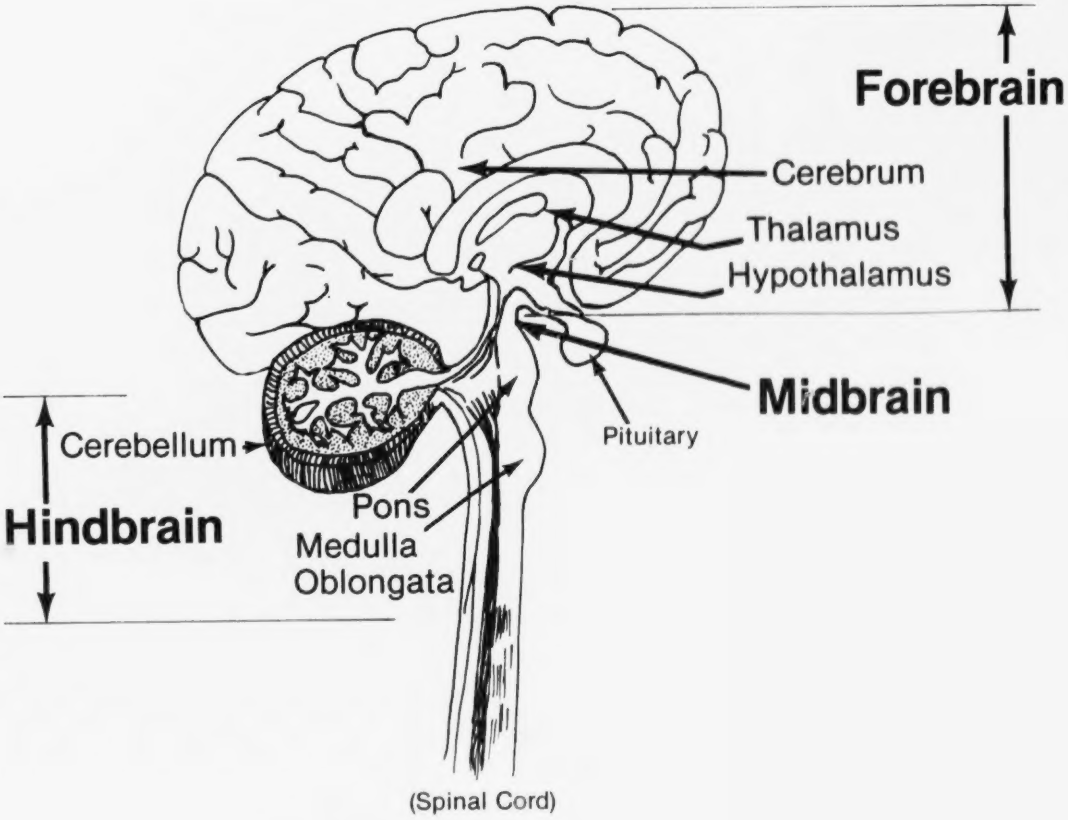


SYNAPSE: Ends of Axons Contact Dendrites or Cell Bodies of Other Cells for Transmission of Impulses

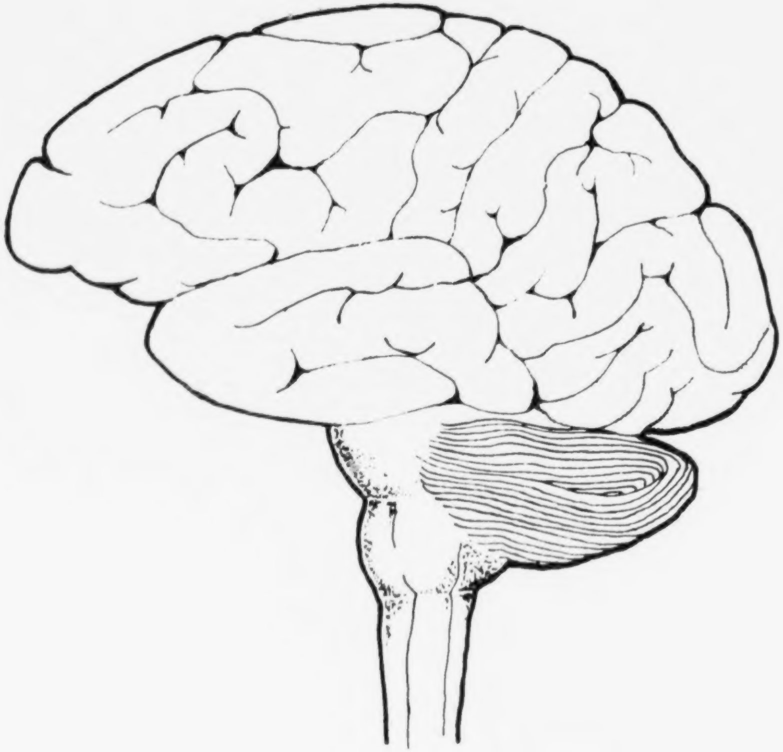
TM #2

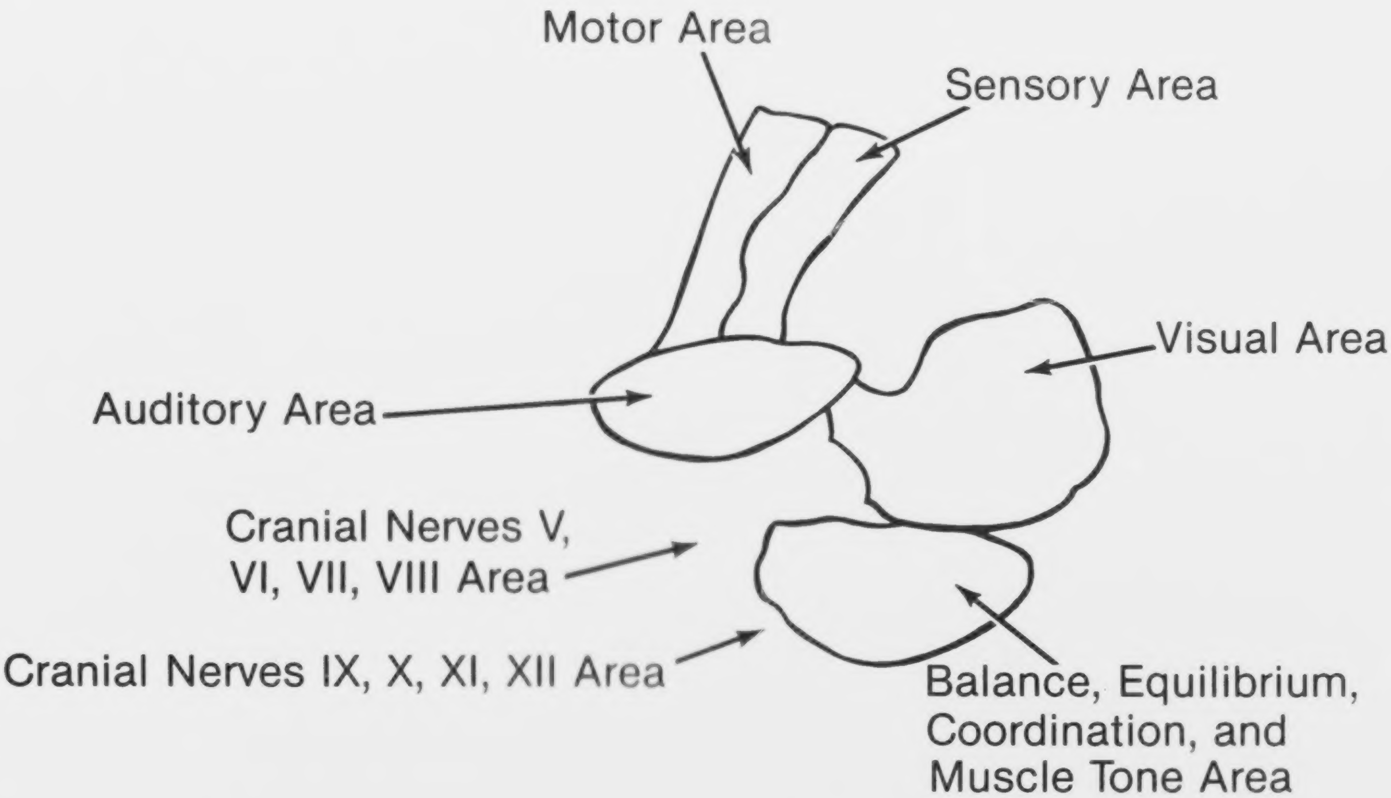
AHC - 265-D

Major Parts of the Brain



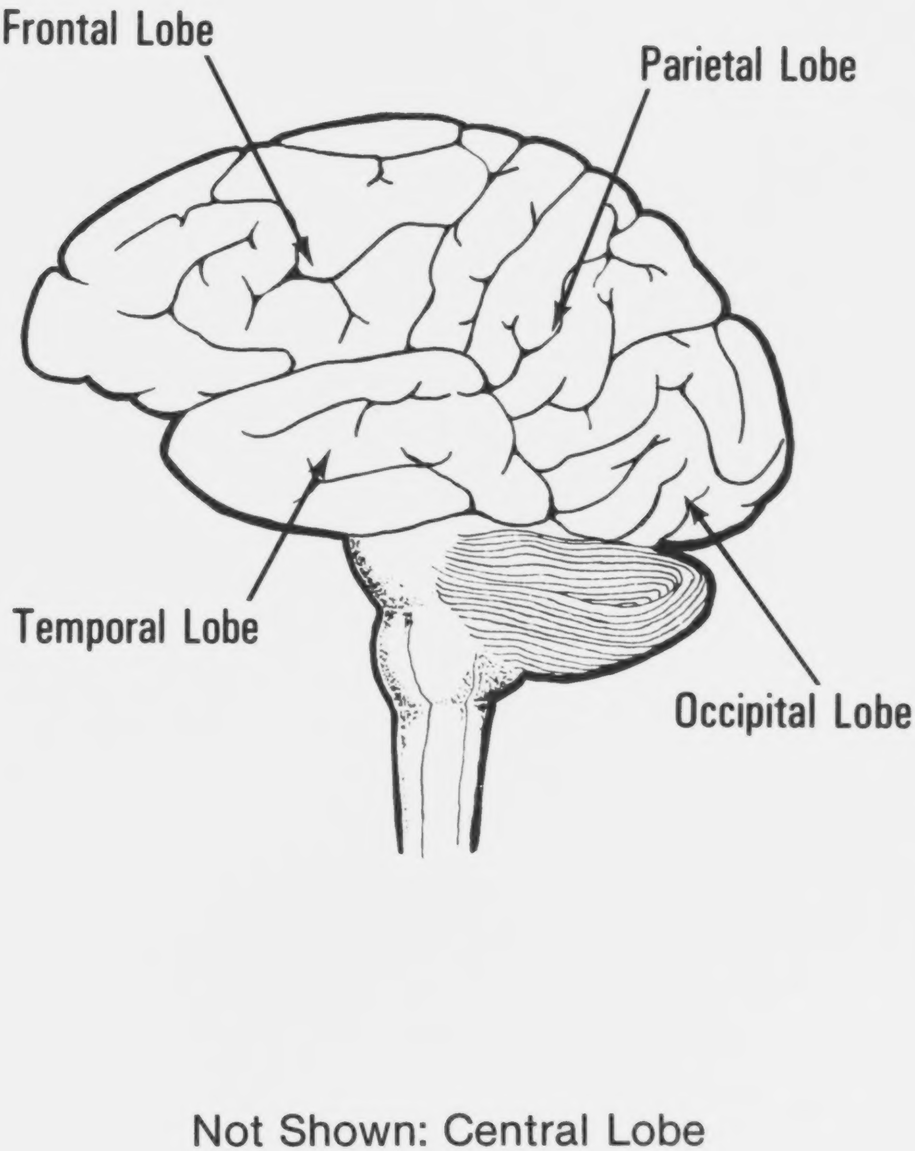
Functional Areas of the Brain




Motor Area
Sensory Area
Visual Area
Auditory Area
Cranial Nerves V, VI, VII, VIII Area
Cranial Nerves IX, X, XI, XII Area
Balance, Equilibrium, Coordination, and Muscle Tone Area

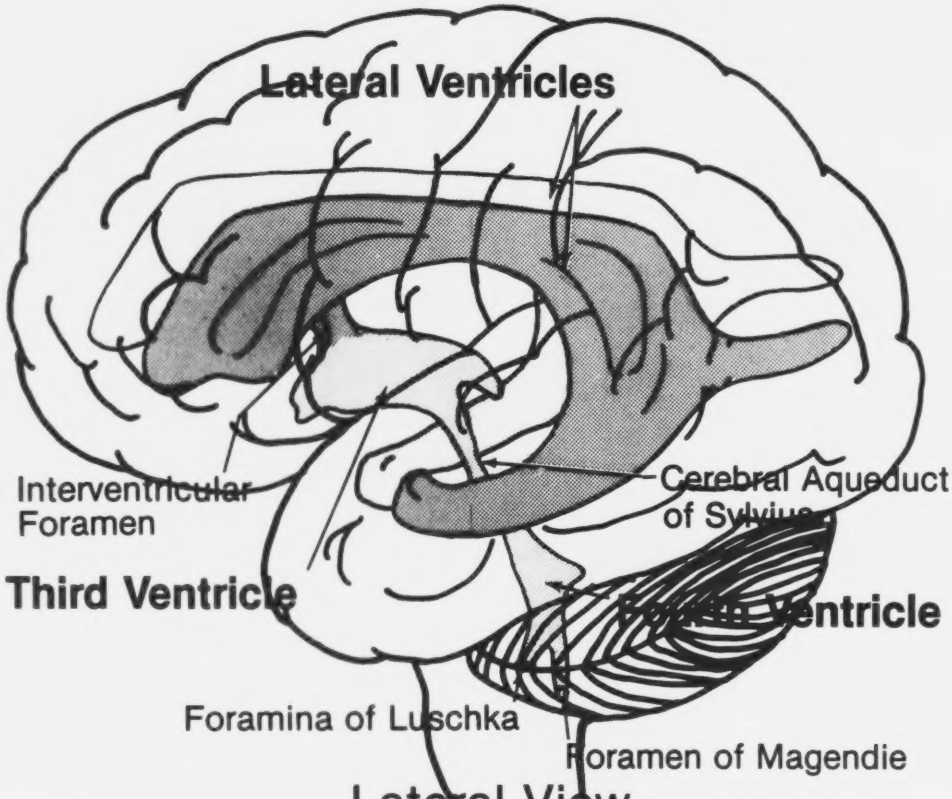
TM #4A

Lobes of the Cerebral Hemisphere

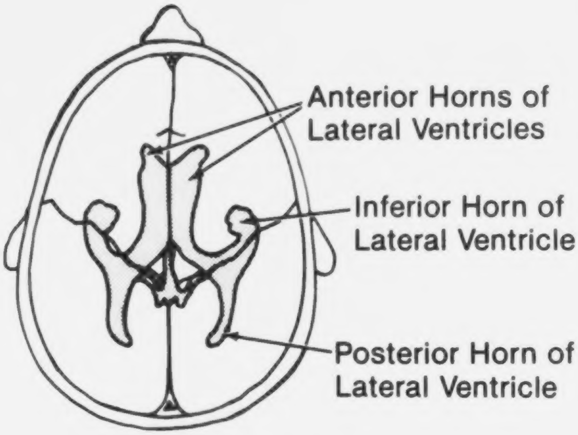


Not Shown: Central Lobe

Ventricles of the Brain

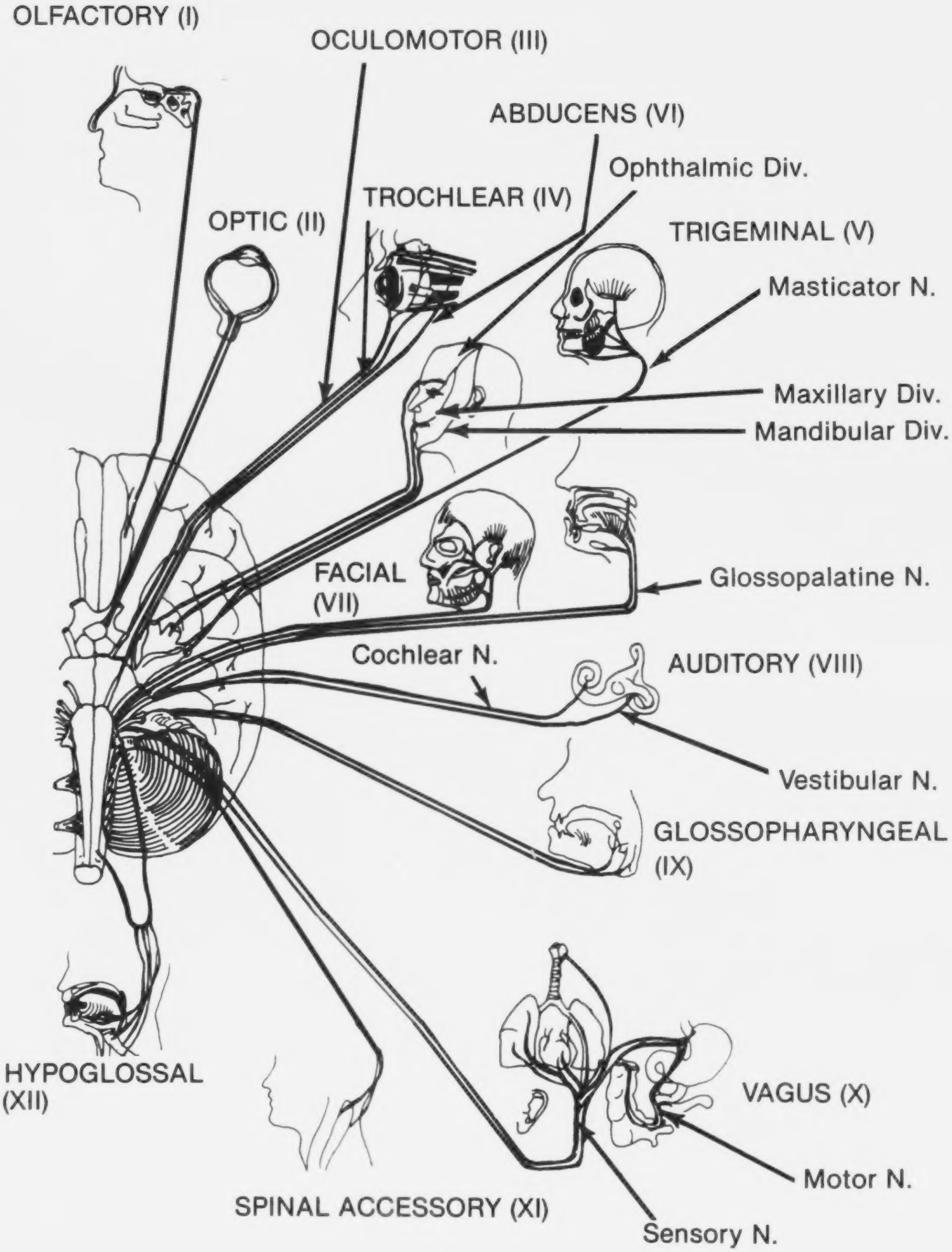


Lateral View

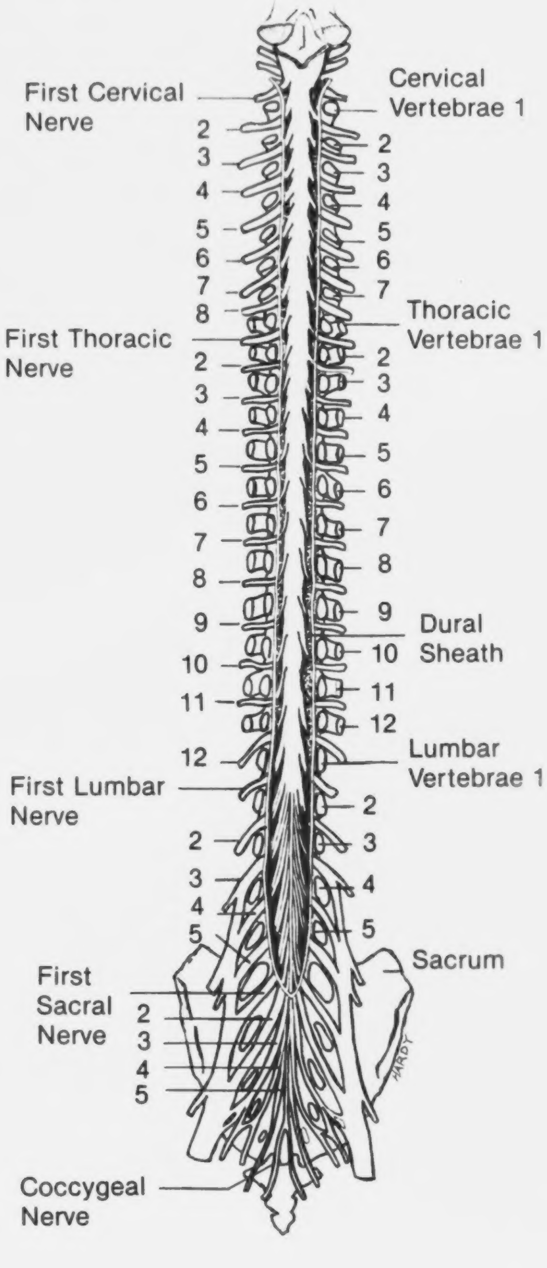

Anterior Horns of Lateral Ventricles
Inferior Horn of Lateral Ventricle
Posterior Horn of Lateral Ventricle

Superior View

The Cranial Nerves

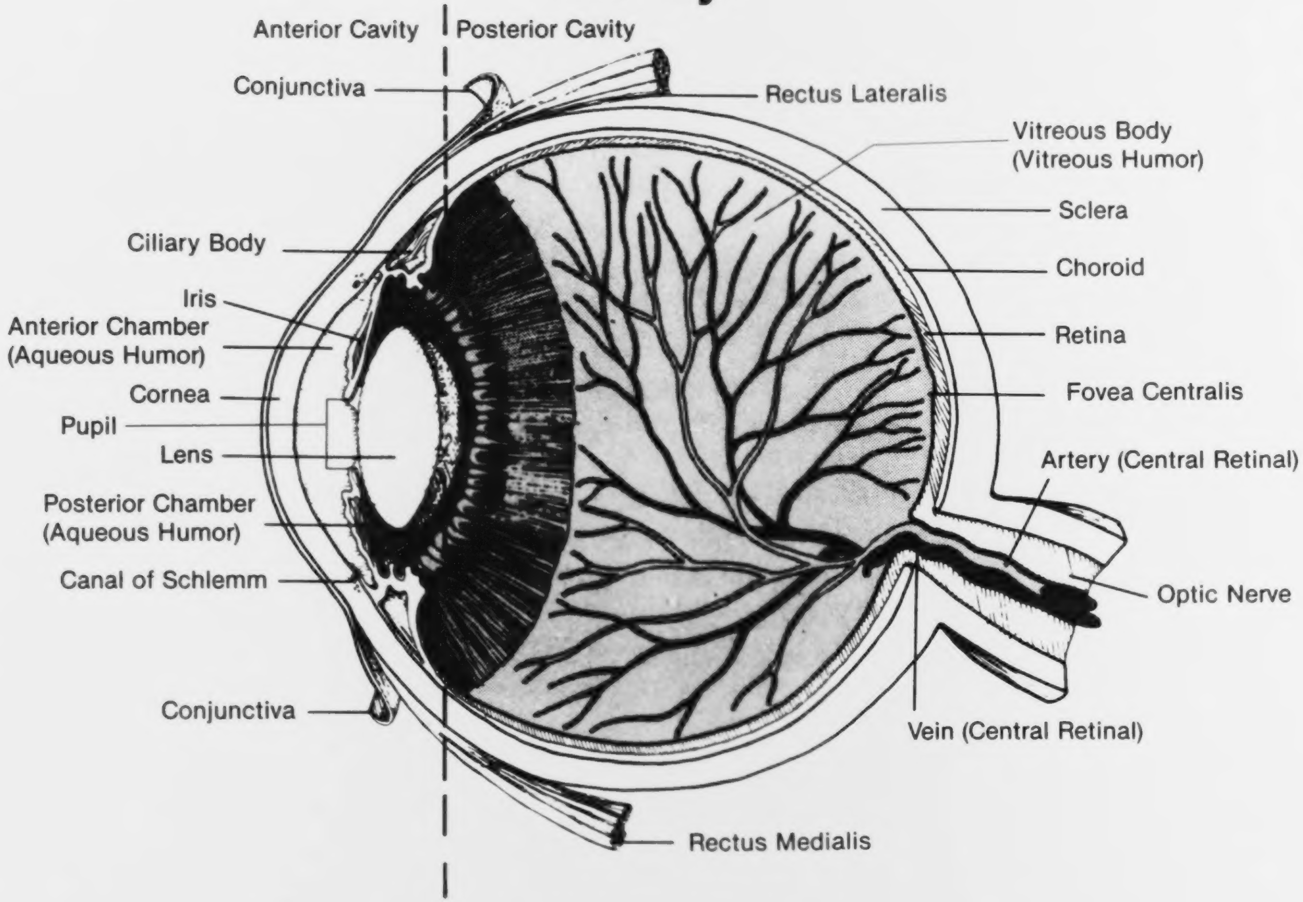


The Spinal Nerves



Chaffee EE, Greisheimer EM: *Basic Physiology and Anatomy*, 4th ed. Philadelphia, JB Lippincott, 1979. Used with permission.

The Eye



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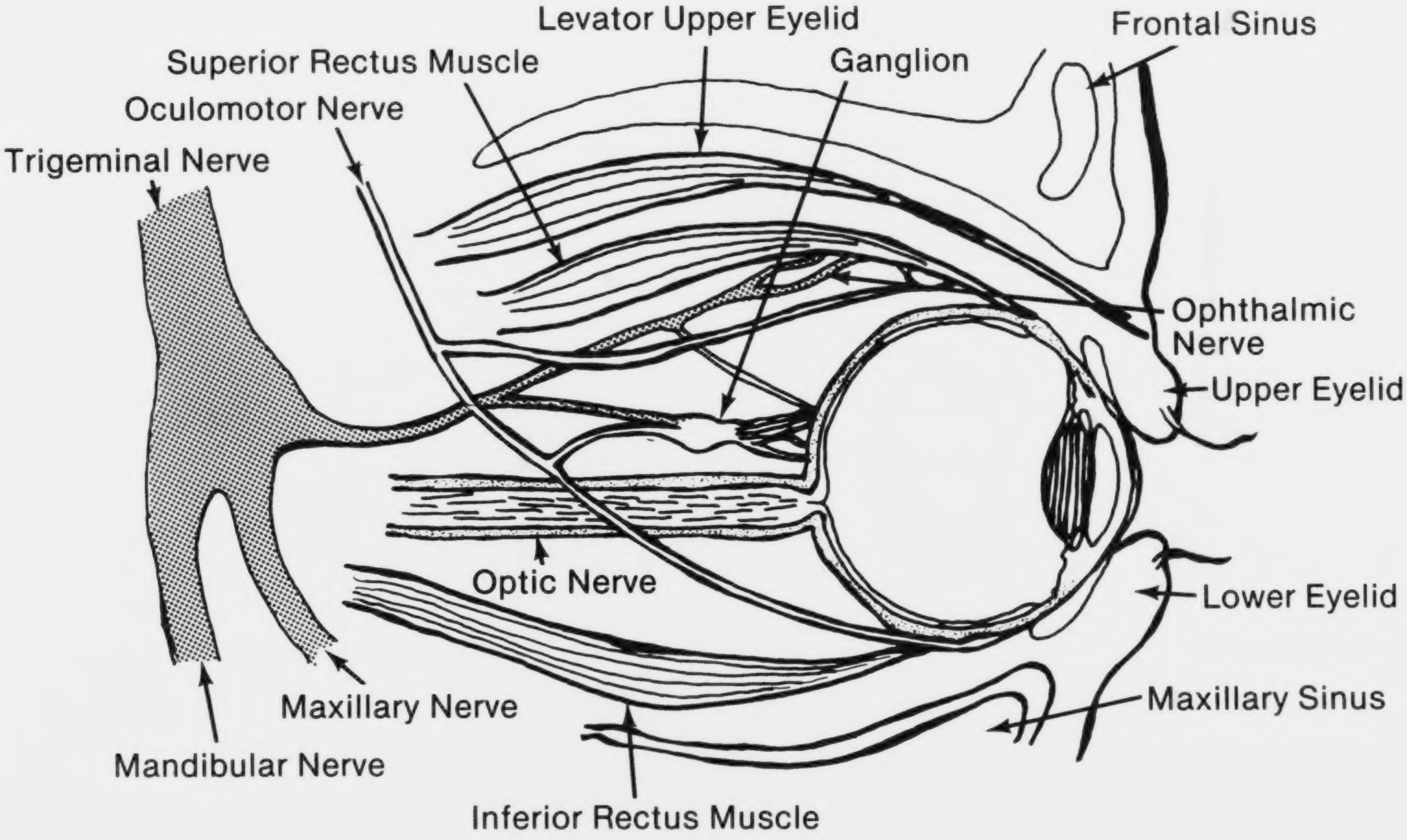
TM #9

AHC - 281-D

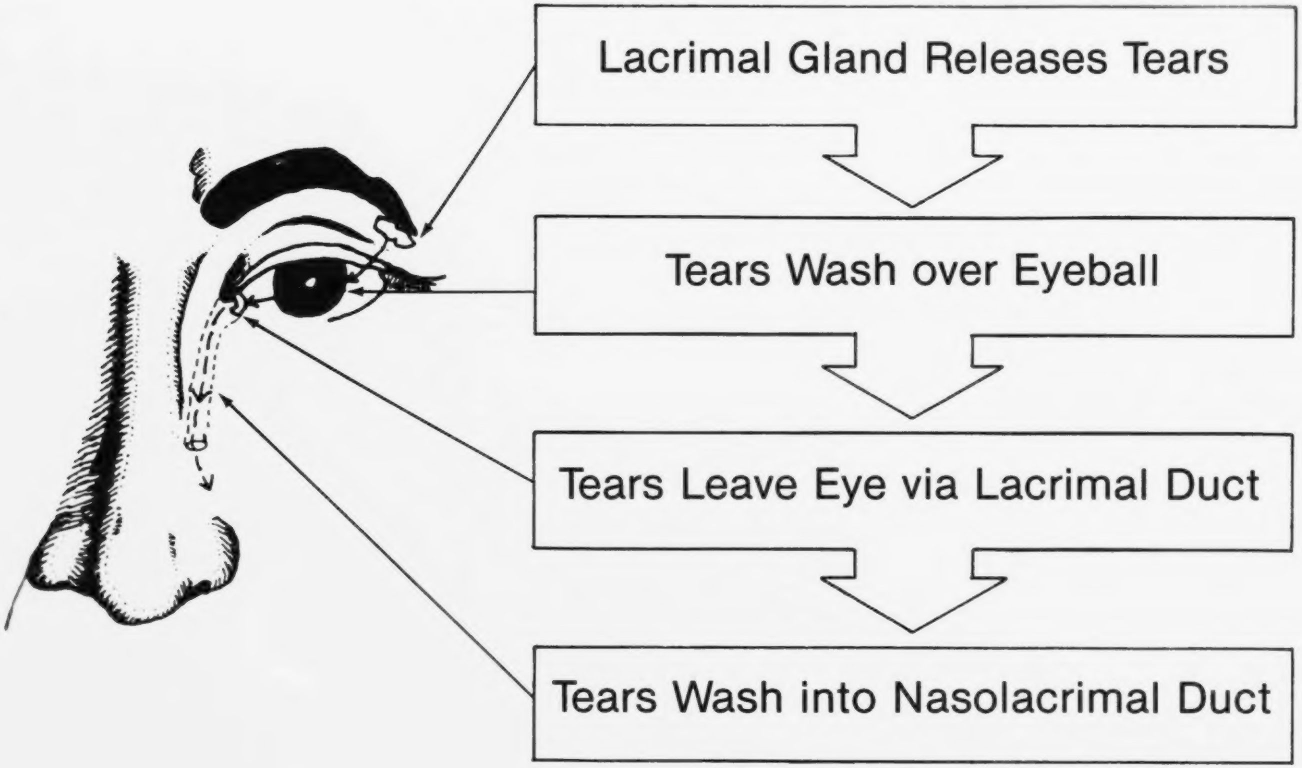
Accessory Structures of the Eye



TM #10

AHC - 283-D

The Lacrimal Gland and Duct



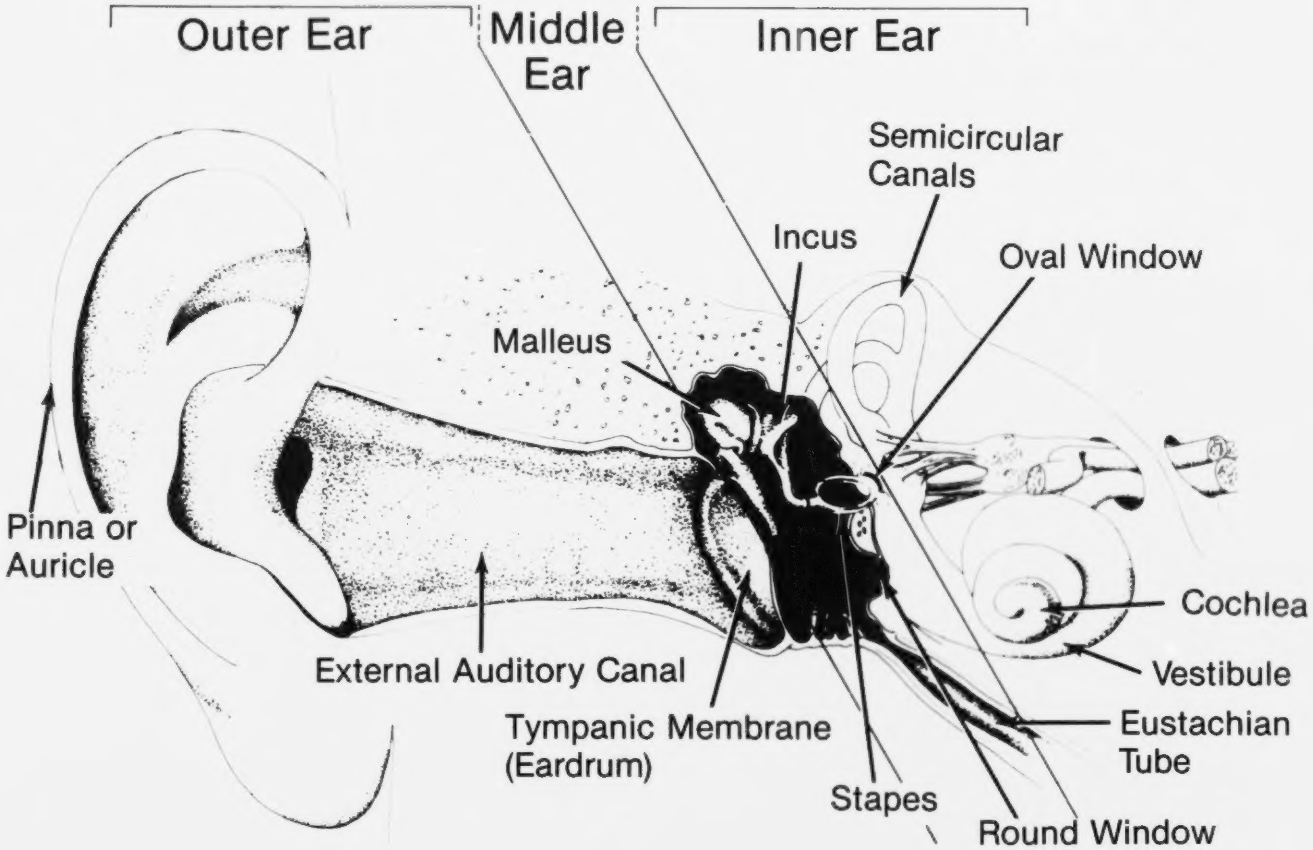
Lacrimal Gland Releases Tears

Tears Wash over Eyeball

Tears Leave Eye via Lacrimal Duct

Tears Wash into Nasolacrimal Duct

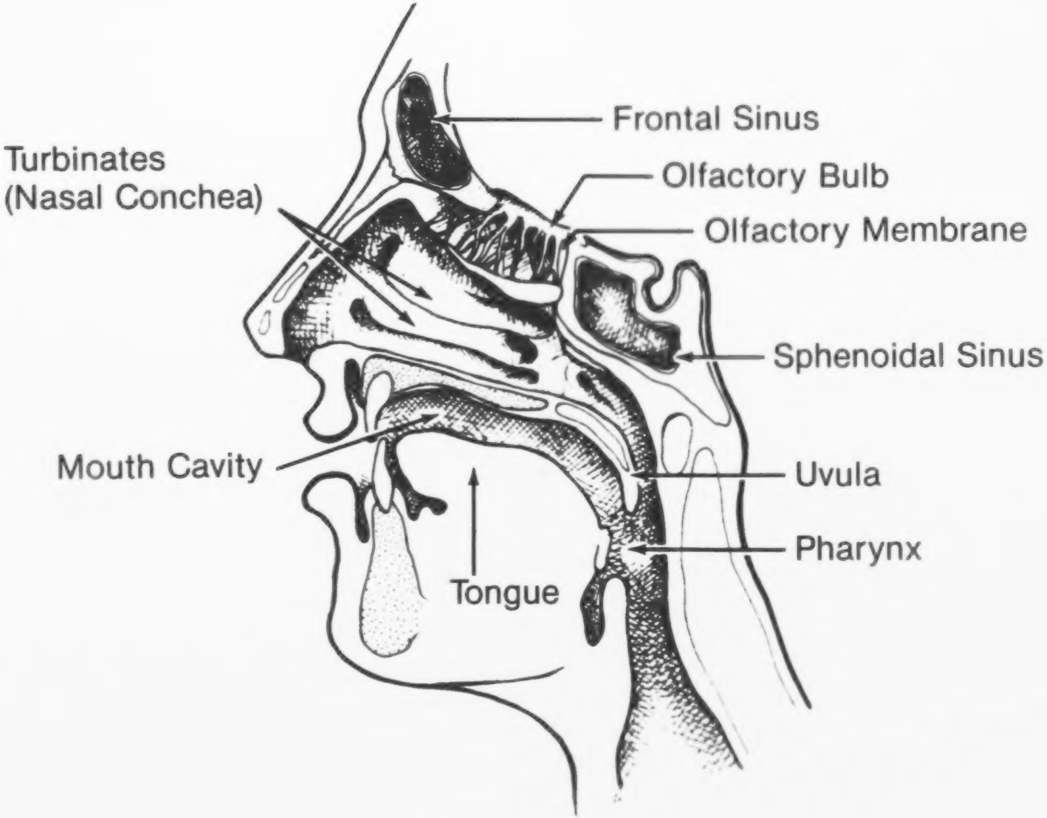
The Ear



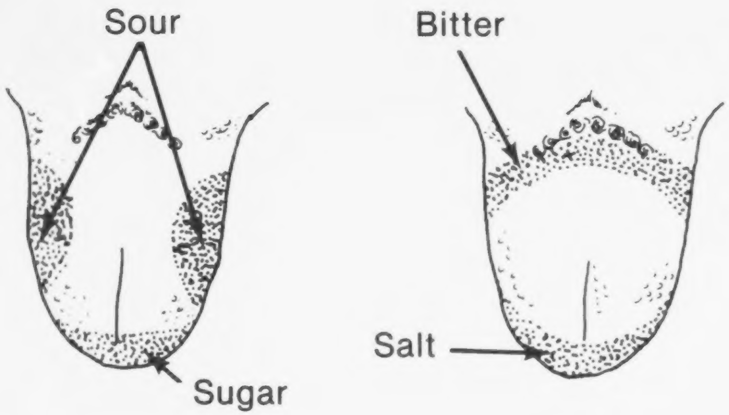
TM #12

AHC - 287-D

The Nose

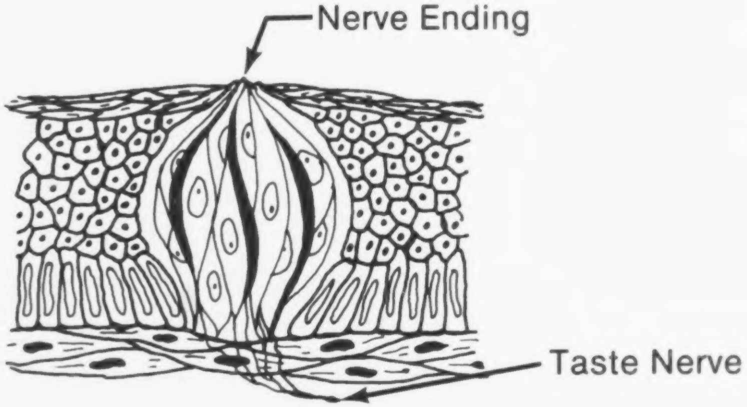

Frontal Sinus
Turbinates (Nasal Conchea)
Olfactory Bulb
Olfactory Membrane
Sphenoidal Sinus
Mouth Cavity
Uvula
Pharynx
Tongue

The Tongue and Taste Buds



Location on the Tongue of the Four Basic Taste Sensations

Enlarged View of a Taste Bud



NERVOUS SYSTEM
UNIT IV

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

A. Midbrain
B. Pons
C. Cerebellum
D. Hindbrain
E. Medulla oblongata
F. Hypothalamus
G. Thalamus
H. Cerebrum
I. Forebrain

Assignment Sheet #2

A. 4
B. 4
C. 3
D. 1
E. 4
F. 2
G. 2
H. 4
I. 1
J. 2
K. 4
L. 1
M. 2
N. 2
O. 4
P. 4
Q. 4
R. 1
S. 2
T. 3
U. 4
V. 2
W. 4
X. 3
Y. 1

Assignment Sheet #3

A. Anterior fissure
B. Posterior sulcus
C. Gray matter (cell bodies)
D. White matter (nerve fibers)
E. Dorsal root
F. Dorsal root ganglion
G. Spinal nerve
H. Ventral root

Assignment Sheet #4

A. Conjunctiva
B. Iris
C. Lens
D. Anterior chamber
E. Cornea
F. Suspensory ligament
G. Posterior chamber
H. Ciliary muscle
I. Sclera
J. Choroid
K. Retina
L. Optic nerve
M. Vitreous body

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #5

A. Inner ear
B. Middle ear
C. Outer ear
D. Pinna or auricle
E. External auditory canal
F. Tympanic membrane
G. Stapes
H. Round window
I. Eustachian tube
J. Vestibule
K. Cochlea
L. Oval window
M. Semicircular canals
N. Incus
O. Malleus

Assignment Sheet #6

A. 2
B. 4
C. 2
D. 3
E. 2
F. 4
G. 3
H. 2
I. 3
J. 2
K. 2
L. 3
M. 3
N. 1
O. 3
P. 3
Q. 3
R. 4
S. 4
T. 1
U. 2
V. 4
W. 4
X. 3
Y. 4

NERVOUS SYSTEM
UNIT IV

TEST

NAME ______________________________ SCORE ______________

1. Match to their correct definitions terms associated with the nervous system. Write the correct numbers in the blanks.

   ______a. Eye socket

   ______b. Bundle of fibers, blood vessels, and connective tissue outside the central nervous system

   ______c. Study of the eye and its diseases

   ______d. Brain, spinal cord, and nerves that work together to coordinate body activities

   ______e. Mass of nerve tissue—primarily nerve cell bodies—outside central nervous system

   ______f. Waxlike, soft brown secretion found in external ear canal; lubricates and protects external canal and eardrum

   ______g. Sensations such as taste, smell, touch, hunger, thirst, position, and balance perceived by the body

   ______h. Study of the ear and its diseases

   ______i. Small brain cavity

   ______j. Pertaining to sense of smell

   ______k. Study of the nervous system and its diseases

   ______l. Anything that produces a response or increase in activity in living matter

   ______m. Pertaining to the sense of taste

   1. Otology
   2. Ophthalmology
   3. Neurology
   4. Ganglion (plural, *ganglia*
   5. Stimulus (plural, *stimuli)*
   6. Nervous system
   7. Special senses
   8. Nerve
   9. Ventricle
   10. Olfactory
   11. Cerumen
   12. Orbit
   13. Gustatory

2. List the basic functions of the nervous system.

   a. Reception — ______________________________

   ____

   b. Transmittal — ______________________________

   ____

   c. Response — ______________________________

   ____

TEST

3. Distinguish among the main divisions of the nervous system. Write a "CNS" in the blanks before components of the central nervous system, "PNS" before components of the peripheral nervous system, and "ANS" before components of the autonomic nervous system.

_____a. Spinal cord

_____b. Cranial nerves, twelve pairs that carry impulses to and from brain

_____c. Ganglia and fibers that lie on either side of spinal cord and automatically regulate action of glands, smooth muscles of hollow organs, and heart

_____d. Brain

_____e. Spinal nerves, thirty-one pairs that carry messages to and from spinal cord

4. Identify the major parts of the brain illustrated below. Write the correct numbers in the blanks.

_____a. Hindbrain

_____b. Medulla oblongata

_____c. Hypothalamus

_____d. Midbrain

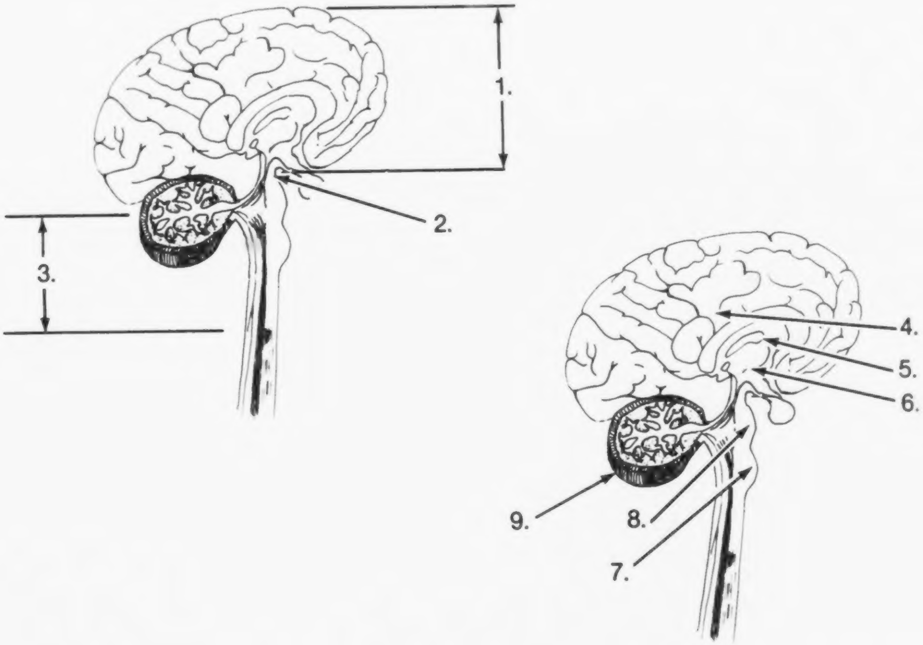
_____e. Cerebellum

_____f. Forebrain

_____g. Thalamus

_____h. Pons

_____i. Cerebrum



TEST

5. List the functions of the cerebral cortex.

   a. Motor area — ____

   ____

   b. Sensory area — ____

   ____

   c. Association area — ______________________________________

   ____

6. Select correct functions of the different parts of the brain. Write the correct numbers in the blanks.

______a. Forebrain: frontal lobe of cerebrum

1) Controls body balance, equilibrium, coordination, and muscle tone
2) Controls hearing, smell, and taste
3) Controls vision
4) Controls voluntary muscles and judgment

______b. Forebrain: parietal lobe of cerebrum

1) Controls sensory functions such as pain, touch, and temperature interpretation
2) Relays impulses between cerebrum and cerebellum, and between cerebrum and medulla oblongata
3) Serves as a reflex center
4) Serves as a relay center and monitors sensory stimuli

______c. Forebrain: temporal lobe of cerebrum

1) Controls body temperature, water balance, sleep, appetite, some emotions such as fear and pleasure, and the autonomic nervous system
2) Controls hearing, smell, and taste
3) Controls vital functions such as breathing, heart rate, blood pressure, swallowing, and coughing
4) Serves as a reflex center

______d. Forebrain: occipital lobe of cerebrum

1) Controls sensory functions such as pain, touch, and temperature interpretation
2) Controls vision
3) Controls voluntary muscles and judgment
4) Maintains body balance, equilibrium, coordination, and muscle tone

TEST

______e. Forebrain: thalamus

1) Controls body temperature, water balance, sleep, appetite, some emotions such as fear and pleasure, and the autonomic nervous system
2) Controls voluntary muscles and judgment
3) Serves as a reflex center
4) Serves as a relay center and monitors sensory stimuli

______f. Forebrain: hypothalamus

1) Controls body temperature, water balance, sleep, appetite, some emotions such as fear and pleasure, and the autonomic nervous system
2) Controls sensory functions such as pain, touch, and temperature interpretation
3) Maintains body balance, equilibrium, coordination, and muscle tone
4) Relays impulses betwen cerebrum and cerebellum, and between cerebrum and medulla oblongata

______g. Midbrain

1) Controls voluntary muscles and judgment
2) Maintains body balance, equilibrium, coordination, and muscle tone
3) Serves as a reflex center
4) Serves as relay center and monitors sensory stimuli

______h. Hindbrain: pons

1) Controls sensory functions such as pain, touch, and temperature interpretation
2) Controls vital functions such as breathing, heart rate, blood pressure, swallowing, and coughing
3) Relays impulses between cerebrum and cerebellum, and between cerebrum and medulla oblongata
4) Serves as a relay center and monitors sensory stimuli

______i. Hindbrain: medulla oblongata

1) Controls body temperature, water balance, sleep, appetite, some emotions such as fear and pleasure, and the autonomic nervous system
2) Controls hearing, smell, and taste
3) Controls vision
4) Controls vital functions such as breathing, heart rate, blood pressure, swallowing and coughing

______j. Hindbrain: cerebellum

1) Controls hearing, smell, and taste
2) Controls voluntary muscles and judgment
3) Maintains body balance, equilibrium, coordination, and muscle tone
4) Serves as a relay center and monitors sensory stimuli

TEST

7. Describe the protection of the central nervous system.

____

____

____

____

____

8. Match the following cranial nerves to their correct functions. Write the correct numbers in the blanks.

______a. Controls muscles of neck and upper back

______b. Controls one eyeball muscle

______c. Acts as a pathway for sense of smell

______d. Controls tongue muscles

______e. Controls facial muscles, transmits impulses from middle ear, and acts as pathway for sense of taste

______f. Acts as pathway for sense of sight

______g. Controls swallowing, hunger, speech muscles, breathing, heart rate, peristalsis, and glands in stomach and pancreas

______h. Controls part of eyeball muscles

______i. Supplies motor, sensory, and intermediate sensations via three branches to cornea and conjuctiva, upper portion of face, ear, lower lip, teeth, gums, and muscles for chewing

______j. Controls lateral eye movement

______k. Acts as pathway for sense of hearing and sense of balance

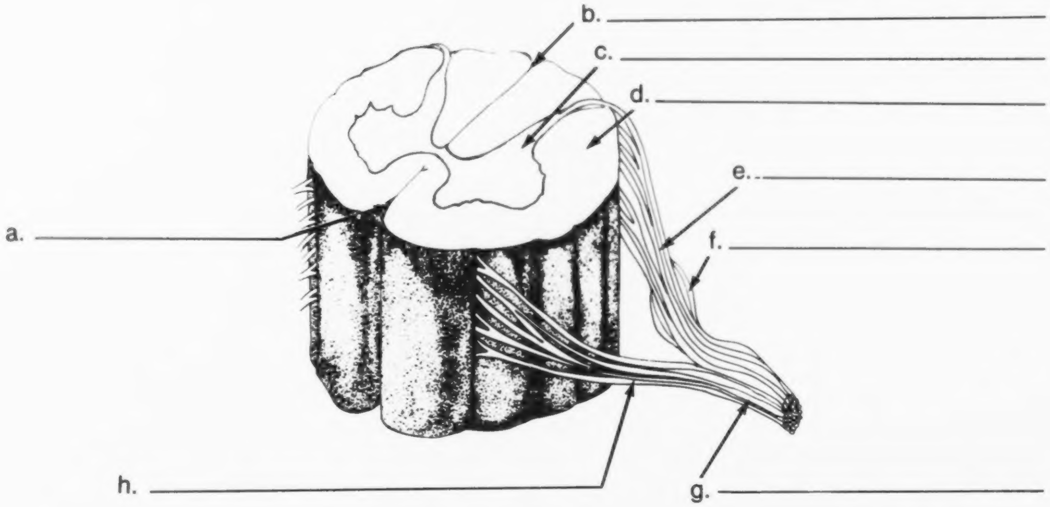
______l. Controls swallowing and acts as pathway for sense of taste

1. Olfactory (I)
2. Optic (II)
3. Oculomotor (III)
4. Trochlear (IV)
5. Trigeminal (V)
6. Abducens (VI)
7. Facial (VII)
8. Auditory (VIII)
9. Glossopharyngeal (IX)
10. Vagus (X)
11. Spinal accessory (XI)
12. Hypoglossal (XII)

TEST

9. Identify components of the spinal cord illustrated below. Write the correct names in the blanks.

Anterior fissure
Posterior sulcus
Spinal nerve
White matter (nerve fibers)
Ventral root
Gray matter (cell bodies)
Dorsal root
Dorsal root ganglion



a. ____

b. ____

c. ____

d. ____

e. ____

f. ____

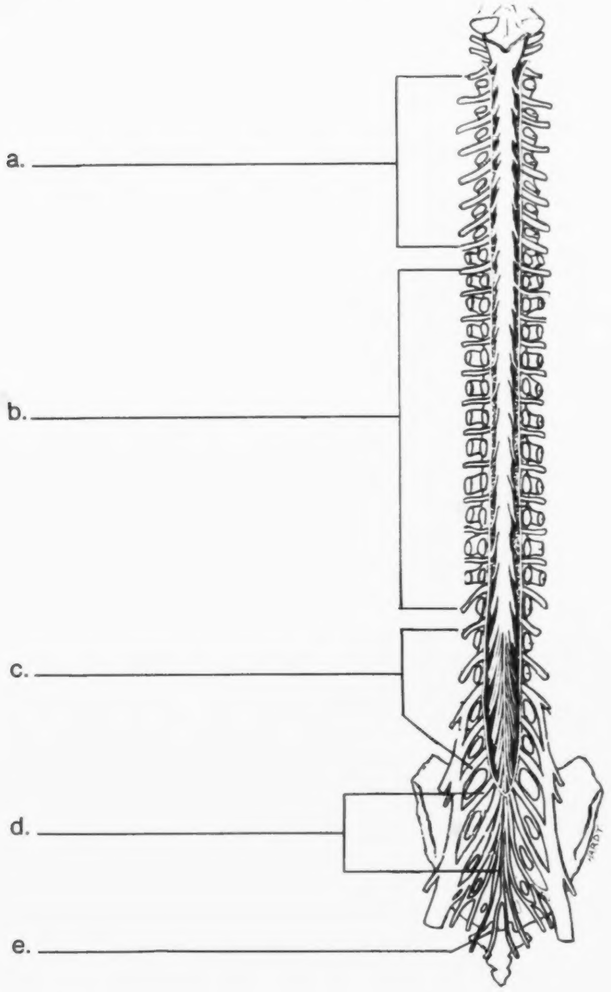
g. ____

h. ____

TEST

10. Identify the names and locations of the spinal nerves. Write the correct names in the blanks.

Sacral **Thoracic** **Coccygeal** **Lumbar** **Cervical**



11. Describe the parts of the sensory system.

a. Receptors — ____

b. Sensory nerve — ____

c. Sensory center — ____

TEST

12. Match the five major special senses to their correct organs. Write the correct numbers in the blanks.

_____a. Taste sense

_____b. Smell sense

_____c. Visual sense

_____d. Touch sense

_____e. Hearing sense

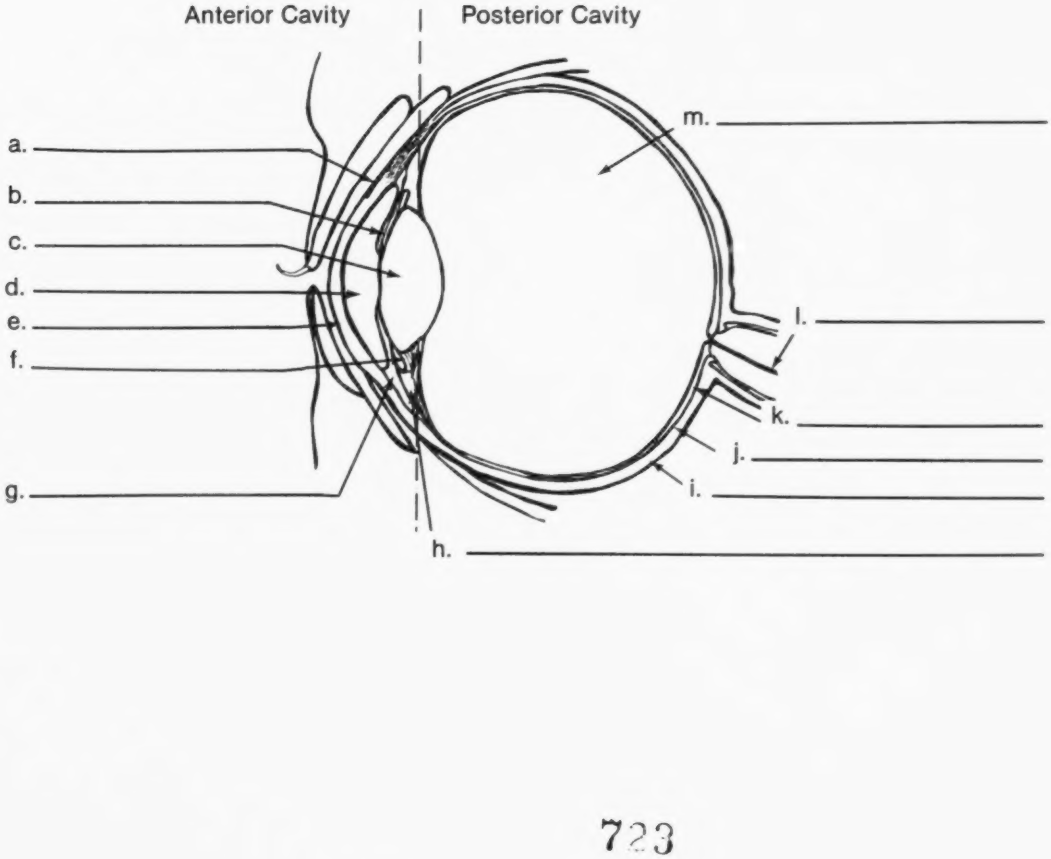
1. Eye
2. Ear
3. Nose
4. Tongue
5. Skin and internal organs

13. Identify the parts of the eye illustrated below. Write the correct names in the blanks.

Retina
Iris
Posterior chamber (aqueous humor)
Conjunctiva

Vitreous body
Ciliary muscle
Optic nerve
Vitreous body (vitreous humor)

Lens
Suspensory ligament
Sclera
Choroid
Cornea



TEST

14. Name the accessory structures of the eye.

a. ______________________________

b. ______________________________

c. ______________________________

15. Select correct functions of eye parts and accessory structures. Write the correct numbers in the blanks.

_____a. Conjunctiva

1) Component that covers front of eyeball, lines eyelid, and aids in keeping eye moist
2) Levators that open and close eyelids
3) Opening in iris that permits light to enter
4) Structure that controls part of eye muscles

_____b. Choroid

1) Chordlike nerve that conducts impulses from retina to brain
2) Jellylike substance that maintains shape of eyeball
3) Middle vascular layer on lateral and posterior eyeball; supplies oxygen and nutrients
4) Space behind lens that holds vitreous humor

_____c. Iris

1) Clear, transparent part of sclera on front of eyeball that allows light to enter pupil
2) Circular muscle that regulates amount of light entering pupil; the pigmented or colored part of the eye
3) Opening in eye that permits light to enter
4) Structure that carries tears from eye to nasal cavity

_____d. Pupil

1) Opening in iris that permits light to enter
2) Component that controls shape of lens to make a sharp, clear image
3) Pathway that conducts visual impulses from retina to brain
4) Space behind lens that holds vitreous humor

_____e. Ciliary muscle

1) Circular muscle that regulates amount of light entering pupil
2) Component that controls part of eye muscles
3) Component that controls shape of lens to make a sharp, clear image
4) Component that holds lens in place

TEST

_____f. Sclera

1) Component that covers front of eyeball, lines eyelid, and aids in keeping eye moist
2) Jellylike substance that maintains shape of eyeball
3) Tough, white, fibrous protective layer covering eyeball
4) Watery, transparent fluid that helps keep the shape and position of the cornea

_____g. Cornea

1) Clear, transparent part of sclera on front of eyeball that allows light to enter pupil
2) Inner layer of nerve tissue containing tiny receptors (rods and cones) for vision
3) Opening in iris that permits light to enter
4) Structure that carries tears from eye to nasal cavity

_____h. Lens

1) "Camera" of the eye
2) Circular, jellylike suspension that focuses images on retina
3) Circular muscle that regulates amount of light entering pupil
4) Clear, transparent part of sclera on front of eyeball that allows light to enter pupil

_____i. Suspensory or ciliary ligament

1) Circular muscle that regulates amount of light entering pupil
2) Component that controls shape of lens to make a sharp, clear image
3) Component that holds lens in place
4) Levator that opens and closes eyelid

_____j. Anterior chamber

1) Inner anterior space in eyeball that holds rods and cones
2) Middle vascular space on lateral and anterior eyeball
3) Space behind lens that holds vitreous humor
4) Space between cornea and iris that holds aqueous humor

_____k. Posterior chamber

1) Inner posterior space in eyeball that holds rods and cones
2) Middle vascular space on lateral and posterior eyeball
3) Space behind lens that holds vitreous humor
4) Space between cornea and iris that holds aqueous humor

_____l. Vitreous humor

1) Circular, jellylike suspension that focuses images on retina
2) Jellylike substance that maintains shape of eyeball
3) Tears
4) Watery, transparent fluid that helps keep shape and position of cornea

TEST

_____m. Aqueous humor

1) Circular, jellylike suspension that focuses images on retina
2) Jellylike substance that maintains shape of eyeball
3) Tears
4) Watery, transparent fluid that helps keep shape and position of cornea

_____n. Retina

1) Component that carries impulses of pain, touch, temperature from eye and surrounding parts to brain
2) Component that covers front of eyeball, lines eyelid, and aids in keeping eye moist
3) Inner layer of nerve tissue containing tiny receptors (rods and cones) for vision
4) Middle vascular layer that supplies oxygen and nutrients to eyeball

_____o. Optic nerve

1) Component that carries impulses of pain, touch, temperature from eye and surrounding parts to brain
2) Pathway that conducts visual impulses from retina to brain
3) Structure that carries tears from eye to nasal cavity
4) Structure that secretes tears to moisten and cleanse eye and destroy some bacteria

_____p. Lacrimal gland

1) Component that controls part of eye muscles
2) Component that holds lens in place
3) Structure that carries tears from eye to nasal cavity
4) Structure that secretes tears to moisten and cleanse eye and destroy some bacteria

_____q. Lacrimal duct

1) Component that controls part of the eye muscles
2) Component that holds lens in place
3) Structure that carries tears from eye to nasal cavity
4) Structures that secretes tears to moisten and cleanse eye and destroy some bacteria

_____r. Eyelid muscle

1) Circular muscle that regulates amount of light entering pupil
2) Component that controls shape of lens to make a sharp, clear image
3) Component that holds lens in place
4) Levator that opens and closes eyelid

_____s. Oculomotor nerve

1) Component that carries impulses of pain, touch, temperature from eye and surrounding parts of brain
2) Component that controls part of eye muscles
3) Pathway that conducts visual impulses from retina to brain
4) Structure that secretes tears to moisten and cleanse eye and destroy some bacteria

TEST

______t. Ophthalmic nerve

1) Component that carries impulses of pain, touch, temperature from eye and surrounding parts to brain
2) Component that controls shape of lens to make a sharp, clear image
3) Inner layer of nerve tissue containing tiny receptors (rods and cones) for vision
4) Pathway that conducts visual impulses from retina to brain

16. Identify the parts of the ear illustrated below. Write the correct numbers in the blanks.

___ a. Oval window

___ b. Semicircular canals

___ c. Tympanic membrane (eardrum)

___ d. Inner ear

___ e. Outer ear

___ f. Middle ear

___ g. Round window

___ h. External auditory canal

___ i. Cochlea

___ j. Vestibule

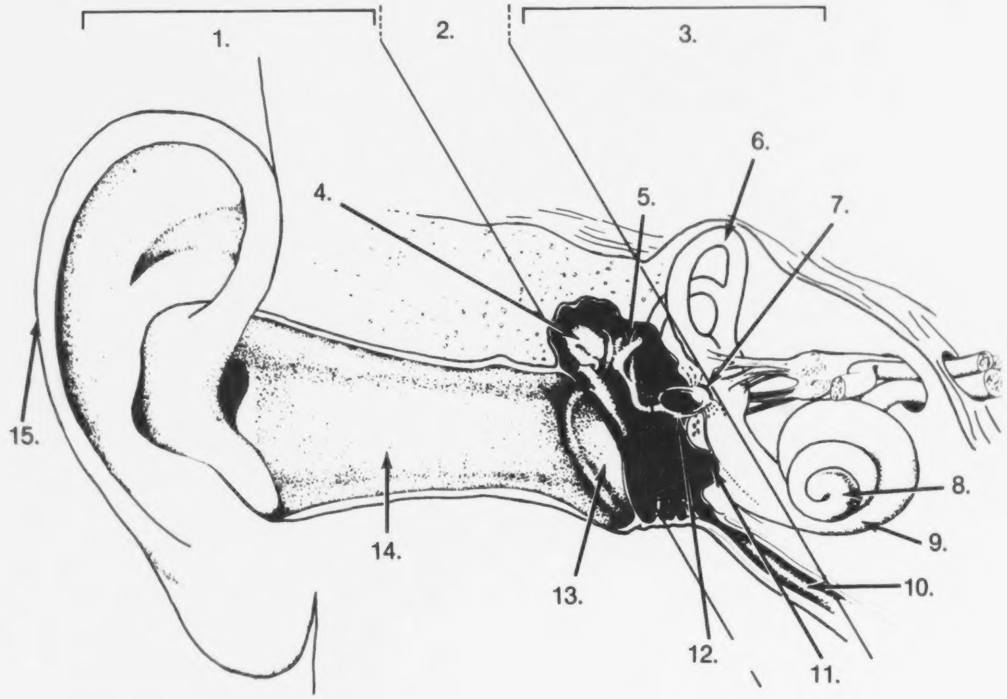
___ k . Pinna or auricle

___ l . Incus

___ m. Eustachian tube

___ n. Stapes

___ o. Malleus



TEST

17. State functions of the parts of the ear.

a. Outer ear

1) Pinna or auricle — ____

2) External auditory canal — ______________________________________

3) Tympanic membrane (eardrum) — __________________________________

b. Middle ear

1) Ossicles (malleus, incus, stapes) — ______________________________

____

2) Oval window — ____

____

3) Round window — ____

____

4) Eustachian tube — ____

____

c. Inner ear

1) Cochlea — ____

2) Vestibule — ____

3) Semicircular canals — _____________________________________

18. Select correct statements about the senses. Write the correct numbers in the blanks.

______a. The sense of taste is also called the ____________ sense.

1) Gustatory
2) Olfactory
3) Somatic
4) Visceral

______b. Receptors for taste are called

1) Dendrites
2) Gustators
3) Papillae
4) Taste buds

TEST

______c. The sensation of salty taste is received

1) Along left side of tongue
2) Along right side of tongue
3) At back of tongue
4) Near tip of tongue

______d. The sense of smell is also called the ______________ sense.

1) Gustatory
2) Olfactory
3) Somatic
4) Visceral

______e. Receptors for smell are located in the

1) Gustatory epithelium
2) Olfactory epithelium
3) Sensory dendrites
4) Skin and viscera

______f. The olfactory nerve carries impulses to the

1) Brain
2) Dendrites
3) Nasal cavity
4) Papillae

______g. The sense of smell is closely related to the

1) Ability to see
2) Sense of pain
3) Sense of taste
4) Sense of touch

______h. Olfactory nerves

1) Are classified according to their location
2) Are limited to four basic taste sensations, each received at a separate location on the tongue
3) Are the receptors for taste located in the papillae
4) Tire quickly and become less sensitive after a period of time

______i. Touch is sensed by

1) Epithelium in nasal cavity
2) Papillae located in mucous membrane
3) Sensory dendrites located in skin
4) The viscera

TEST

_____j. Pain receptors are located in

1) The brain
2) The central nervous system
3) The skin
4) The skin and viscera

_____k. Pain originating from the peripheral nervous system is called

1) Psychosomatic pain
2) Referred pain
3) Somatic pain
4) Visceral pain

_____l. Referred pain originates from the

1) Deep structures and viscera
2) Internal organs
3) Peripheral nervous system
4) Skin

19. Describe the education and duties of three health occupations related to the nervous system and the special senses.

a. Occupation — ____

____

____

____

____

b. Occupation — ____

____

____

____

____

c. Occupation — ____

____

____

____

____

NERVOUS SYSTEM
UNIT IV

ANSWERS TO TEST

1. a. 12
   b. 8
   c. 2
   d. 6
   e. 4
   f. 11
   g. 7
   h. 1
   i. 9
   j. 10
   k. 3
   l. 5
   m. 13

2. a. Receives internal and external stimuli through the sensory organs
   b. Transmits stimuli to and from brain, which interprets, stores, and coordinates information received
   c. Responds to internal and external stimuli through motor organs

3. a. CNS
   b. PNS
   c. ANS
   d. CNS
   e. PNS

4. a. 3
   b. 7
   c. 6
   d. 2
   e. 9
   f. 1
   g. 5
   h. 8
   i. 4

5. a. Motor area — Controls movement of muscles
   b. Sensory area — Receives impulses of heat, cold, pain, and pressure
   c. Association area — Controls higher mental functions such as memory, thought, judgment, and learning

6. a. 4
   b. 1
   c. 2
   d. 2
   e. 4
   f. 1
   g. 3
   h. 3
   i. 4
   j. 3

ANSWERS TO TEST

7. Description should include the following

   a. Cerebrospinal fluid fills ventricles of brain and subarachnoid spaces of brain and spinal cord, cushioning them against injury
   b. Cranial bones encase the brain
   c. Vertebrae encase the spinal cord
   d. Meninges (tough membranes) cover brain and spinal cord

8. a. 11
   b. 4
   c. 1
   d. 12
   e. 7
   f. 2
   g. 10
   h. 3
   i. 5
   j. 6
   k. 8
   l. 9

9. a. Anterior fissure
   b. Posterior sulcus
   c. Gray matter (cell bodies)
   d. White matter (nerve fibers)
   e. Dorsal root
   f. Dorsal root ganglion
   g. Spinal nerve
   h. Ventral root

10. a. Cervical
    b. Thoracic
    c. Lumbar
    d. Sacral
    e. Coccygeal

11. Description should include the following

    a. Receptor — Specialized nerve ending that receives a stimulus
    b. Sensory nerve — Pathway that carries impulses (messages) from receptor to brain
    c. Sensory center — Area of brain that interprets impulses as senses (sensations)

12. a. 4
    b. 3
    c. 1
    d. 5
    e. 2

13. a. Conjunctiva
    b. Iris
    c. Lens
    d. Anterior chamber (aqueous humor)
    e. Cornea
    f. Suspensory ligament
    g. Posterior chamber (aqueous humor)
    h. Ciliary muscle
    i. Sclera
    j. Choroid
    k. Retina
    l. Optic nerve
    m. Vitreous body (vitreous humor)

ANSWERS TO TEST

14.
- a. Eyebrows and eyelashes
- b. Eyelids (palpebrae)
- c. Lacrimal glands and ducts

15.
- a. 1
- b. 3
- c. 2
- d. 1
- e. 3
- f. 3
- g. 1
- h. 2
- i. 3
- j. 4
- k. 3
- l. 2
- m. 4
- n. 3
- o. 2
- p. 4
- q. 3
- r. 4
- s. 2
- t. 1

16.
- a. 7
- b. 6
- c. 13
- d. 3
- e. 1
- f. 2
- g. 11
- h. 14
- i. 8
- j. 9
- k. 15
- l. 5
- m. 10
- n. 12
- o. 4

17.
- a. Outer ear
    - 1) *Pinna or auricle* — Catches air vibrations or sounds
    - 2) *External auditory canal* — Guides air vibrations to tympanic membrane
    - 3) *Tympanic membrane (eardrum)* — Protects middle ear and vibrates when sounds strike it
- b. Middle ear
    - 1) *Ossicles (malleus, incus, stapes)* — Bony chain that conducts sound waves from eardrum to oval window
    - 2) *Oval window* — Opening that leads from middle ear to vestibule of inner ear; houses stapes
    - 3) *Round window* — Opening in middle ear covered by secondary tympanic membrane; aids in transmitting sound waves from ossicles to inner ear
    - 4) *Eustachian tube* — Regulates pressure in middle ear to equal that outside the eardrum

ANSWERS TO TEST

c. Inner ear
   1) *Cochlea* — Contains fluid and organ of Corti (receptors for hearing)
   2) *Vestibule* — Space that controls sense of position
   3) *Semicircular canals* — Fluid-filled passages that control equilibrium

18. a. 1
    b. 4
    c. 4
    d. 2
    e. 2
    f. 1
    g. 3
    h. 4
    i. 3
    j. 4
    k. 3
    l. 1

19. Evaluated to the satisfaction of the instructor

RESPIRATORY SYSTEM
UNIT V

SUGGESTED ACTIVITIES

I. Unit contents

   A. Objective sheet

   B. Suggested activities

   C. Supplements

      1. Supplement #1 — Respiratory System Crossword Puzzle

      2. Supplement #2 — Diseases and Disorders of the Respiratory System

   D. Transparency masters

      1. TM #1 — The Respiratory Tract

      2. TM #2 — Process of Breathing

      3. TM #3 — Exchange of Oxygen and Carbon Dioxide

      4. TM #4 — Pleura

      5. TM #5 — Alveoli

   E. Information sheet

   F. Assignment Sheet #1 — Answer Study Questions About the Respiratory System

   G. Answers to assignment sheet

   H. Test

   I. Answers to test

II. Instructor's guide

   A. Review unit and plan presentation.

   B. Order or obtain equipment and materials to supplement unit.

      1. Films

         a. *Point of View* (Smoking). Available from the Oklahoma State Department of Health, 3400 N. Eastern, Oklahoma City, Oklahoma 73105. This film by the National Tuberculosis Association moves from pungent parody to ouright ridicule, holding up the ritual of cigarette smoking to sharp and outrageous laughter. Welcome as entertainment, this film satirizes cigarette smoking as both foolish and deadly.

SUGGESTED ACTIVITIES

b. *I am Joe's Lung*, 25 minutes, 1975. Available from Pyramid Films, Box 1408, Santa Monica, California 90406. Graphic three-dimensional animation displays the delicate details of the lung's construction and shows the complex nature of pulmonary functions as the lung cleans the air breathed in and purifies the blood.

(NOTE: Film *b* is available to Oklahoma teachers on a free-loan basis. Oklahoma teachers may order from the State Department of Vocational and Technical Education, Film Library, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364. Out-of-state teachers must order from the California address.)

2. Filmstrip — *Physiology of the Respiratory System*. Available from Trainex Corporation, P.O. Box 116, Garden Grove, California 92642.

3. Polar motion spinner and transparencies. Available from American Animation, Inc., 6 East Spruce Street, Box 335, Moorestown, New Jersey 00157.

4. Anamod (three-dimensional model) of the lung. Available from Damon, Instructional Systems Division, 80 Wilson Way, Westwood, Massachusetts 020900-1898 or call toll free 1-800-348-0025.

   (NOTE: The Anamod module teaching system supplies the instructor with a body organ, descriptive test and illustrations, and easy-to-follow tables. The student is provided with information on individual organ structures, pronounciations, descriptions, locations, and functions—all numerically keyed to the substructures of the model. Discussion points and student activities are included to encourage a more complete understanding of the organ's anatomy and physiology.)

5. Additional films, models, and other instructional materials related to the respiratory system available from local chapter of the American Lung Association

6. Overhead, film, and filmstrip projectors.

7. Transparencies and competency profiles

   (NOTE: Transparencies and competency profiles for this unit are available from the State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

C. Provide students with unit.

D. Discuss unit and specific objectives, pointing out that mastery of the specific objectives leads to accomplishment of the unit objective.

E. Discuss information and assignment sheets.

SUGGESTED ACTIVITIES

1. Use Information Sheet, Section I, to introduce students to terms and definitions associated with the respiratory system.

2. Use Information Sheet, Section II, to discuss the purpose of the respiratory system.

   - Discuss the intimate relationship between the respiratory and circulatory systems.

3. Use Information Sheet, Section III, to help students differentiate between respiration and breathing.

   - Use Transparencies #2 and #3 to illustrate your discussion.
   - Ask the students what they think would happen to the respirations in an oxygen-poor environment.
   - Have the students consider the changes in respiration at a higher altitude.
   - Ask the students what they think would happen in a severe injury to the brainstem; after the students considered this, discuss respirators and why they would be used.

4. Use Information Sheet, Section IV, to introduce the students to the parts of the respiratory system.

   - Use Transparency #1 to illustrate your discussion.
   - Use the Anamod module to point out the locations and characteristics of the various structures.
   - Show filmstrip *Physiology of the Respiratory System*.

5. Use Information Sheet, Sections V and VI, to discuss characteristics and functions of the nose and its accessory structures.

   - When discussing the nasal septum, mention that a deviated septum can interfere with normal breathing.
   - Relate epistaxis to the vascular mucous membranes of the nose.
   - Discuss first aid and causes for epistaxis; point out that it is a common phenomenon.
   - Discuss sinus headaches and sinus drainage. Explain that because allergies can cause these headaches and drainage, some geographical areas with a lot of allergens would intensify these conditions.

6. Use Information Sheet, Sections VII and VIII, to discuss the pharynx.

   - Point out the various divisions of the pharynx on the Anamod model.

SUGGESTED ACTIVITIES

7. Use Information Sheet, Sections IX and X, to discuss characteristics of the larynx and trachea.

8. Use Information Sheet, Sections XI through XIV, to discuss the bronchi and lungs.

   - Use Transparencies #4 and #5 to illustrate your discussion.

   - Use the Anamod model to point out characteristics of the bronchi, lung, and pleura.

   - Show film *I Am Joe's Lung*.

9. Use Information Sheet, Sections XV and XVI, to discuss the divisions of the thorax and the actions of the muscles that aid in respiration.

   - Have students review the anatomy and physiology of the respiratory system by completing Assignment Sheet #1 and Supplement #1.

10. Use Information Sheet, Section XVII, to discuss ways of maintaining a healthy respiratory system.

    - Show film *Point of View* and discuss the effects of smoking on the respiratory system.

    - Use Supplement #2 to discuss diseases and disorders of the respiratory system.

11. Use Information Sheet, Section XVIII, to introduce students to occupations related to the respiratory system.

    - Invite a respiratory therapist to speak to the class about career opportunities.

    - Invite other resource people—someone from the Laryngectomy Club or the Lung Association, for instance—to speak to the class.

    - Make a bulletin board display of allied health occupations related to the respiratory system.

F. Give unit test.

G. Critique test and discuss with the class.

H. Complete appropriate section of students' competency profiles.

III. Unit references

A. Boyles, Marcia V., Margaret K. Morgan, and Mary H. McCaulley. *The Health Professions*. Philadelphia: W.B. Saunders Company, 1982.

B. Dox, Ida, Biagio John Melloni, and Gilbert M. Eisner. *Melloni's Illustrated Medical Dictionary*. Baltimore, Maryland: The Williams and Wilkins Company, 1979.

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C. Kellum, Mary. *Anatomy and Physiology*. Stillwater, Oklahoma: Mid-America Vocational Curriculum Consortium, Inc., 1984.

D. Sloan, Jamee Reid. *Health Service Careers*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1979.

E. Rogers, Helen V. and Ann Benson. *Practical Nursing: Volume I*, rev. by Jamee Reid Sloan. Stillwater, Oklahoma: State Deparment of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1981.

RESPIRATORY SYSTEM
UNIT V

SUPPLEMENT #1 — RESPIRATORY SYSTEM CROSSWORD PUZZLE

Use the following clues and your information sheet to complete the crossword puzzle below.

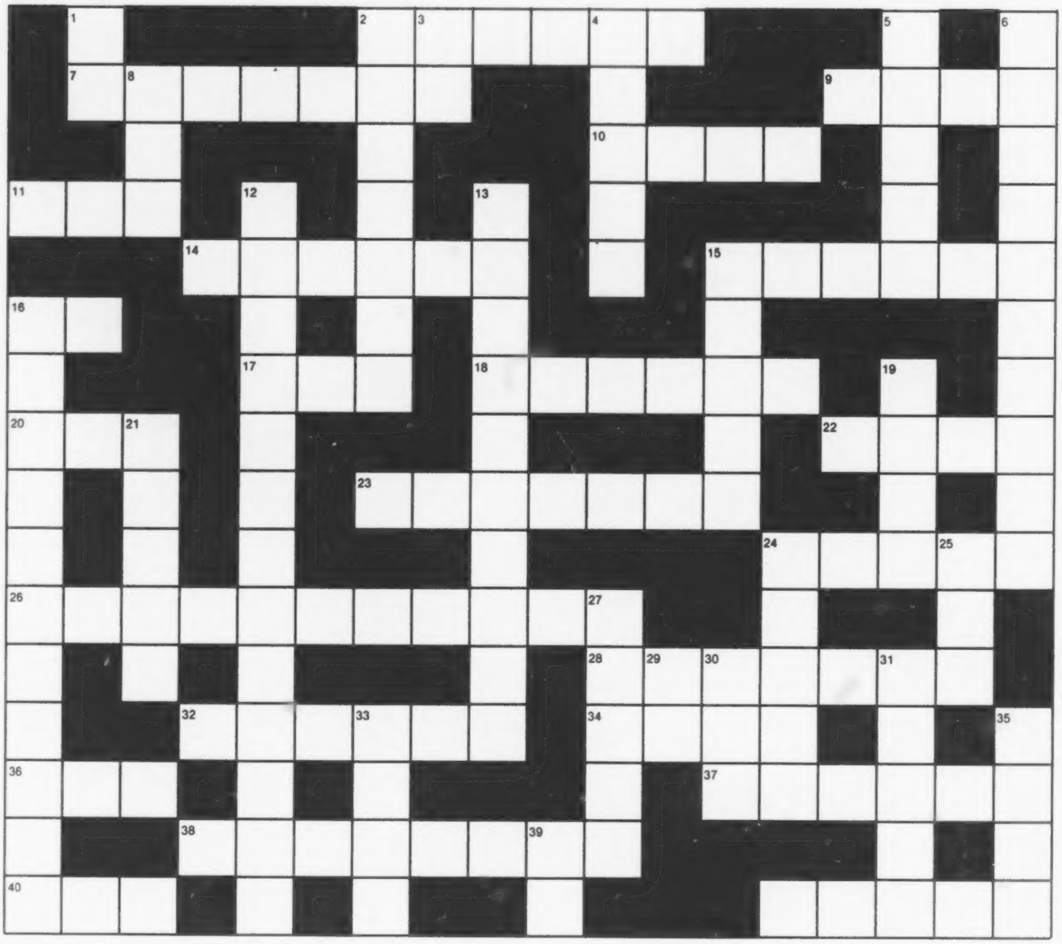
ACROSS

2. Membrane enveloping the lungs and lining walls of chest cavity
7. Two branches of the trachea that convey air to and from the lungs
9. To speak like a child
10. Division of the lung
11. Yakkety-yak
14. Organ of voice
15. Relating to a rib
16. Opposite of *out*
17. The larynx is sometimes called the voice ____________
18. Breath in
20. Cavity of pouch; baglike part of an organ
22. Side of smaller of two lungs
23. Commonly known as windpipe
24. Cavity in skull connected with nasal cavities
26. Taking in of oxygen, its use in the tissues, and the giving off of carbon dioxide
28. Air sacs of the lungs
32. What is exchanged for carbon dioxide within the lungs
34. Stir up
36. Country hotel
37. Many; enough
38. Another term for the pharyngeal tonsils
40. Not old
41. Organs of smell

DOWN

1. Abbreviation for *pound*
2. Passageway for food, fluid, and air
3. Fifty-one, Roman
4. Abnormal respiratory sounds
5. Larger of the two lungs
6. Leaf-shaped cartilage that covers opening of larynx during swallowing to prevent food from entering trachea
8. One of 24 bones that protect the heart and lungs
12. Waste product of respiration (2 wds)
13. Process of removing carbon dioxide from body
15. Hairlike growths projecting from certain cells
16. Process of supplying oxygen to individual tissue cells
19. Vessel that carries blood toward heart
21. The thorax
24. Olfactory sense
25. United Press International (abbr)
27. Exterior nostrils
29. –, a child is born!
30. Very important person
31. Major respiratory organs
33. Transmitter of hereditary traits
35. Affirmative votes
39. Physician (abbr)

SUPPLEMENT #1



SUPPLEMENT #1

■	1 L	■	■	■	■	2 P	3 L	E	U	4 R	A	■	■	■	5 R	■	6 E
■	7 B	8 R	O	N	C	H	I	■	■	A	■	■	■	9 L	I	S	P
■	■	I	■	■	■	A	■	■	■	10 L	O	B	E	■	G	■	I
11 G	A	B	■	12 C	■	R	■	13 E	■	E	■	■	■	■	H	■	G
■	■	■	14 L	A	R	Y	N	X	■	S	■	15 C	O	S	T	A	L
16 I	N	■	■	R	■	N	■	P	■	■	■	I	■	■	■	■	O
N	■	■	■	17 B	O	X	■	18 I	N	H	A	L	E	■	19 V	■	T
20 S	A	21 C	■	O	■	■	■	R	■	■	■	I	■	22 L	E	F	T
P	■	H	■	N	■	23 T	R	A	C	H	E	A	■	■	I	■	I
I	■	E	■	D	■	■	■	T	■	■	■	■	24 S	I	N	25 U	S
26 R	E	S	P	I	R	A	T	I	O	27 N	■	■	M	■	■	P	■
A	■	T	■	O	■	■	■	O	■	28 A	29 L	30 V	E	O	31 L	I	■
T	■	■	32 O	X	Y	33 G	E	N	■	34 R	O	I	L	■	U	■	35 A
36 I	N	N	■	I	■	E	■	■	■	E	■	37 P	L	E	N	T	Y
O	■	■	38 A	D	E	N	O	I	39 D	S	■	■	■	■	G	■	E
40 N	E	W	■	E	■	E	■	■	R	■	■	■	N	O	S	E	S

RESPIRATORY SYSTEM
UNIT V

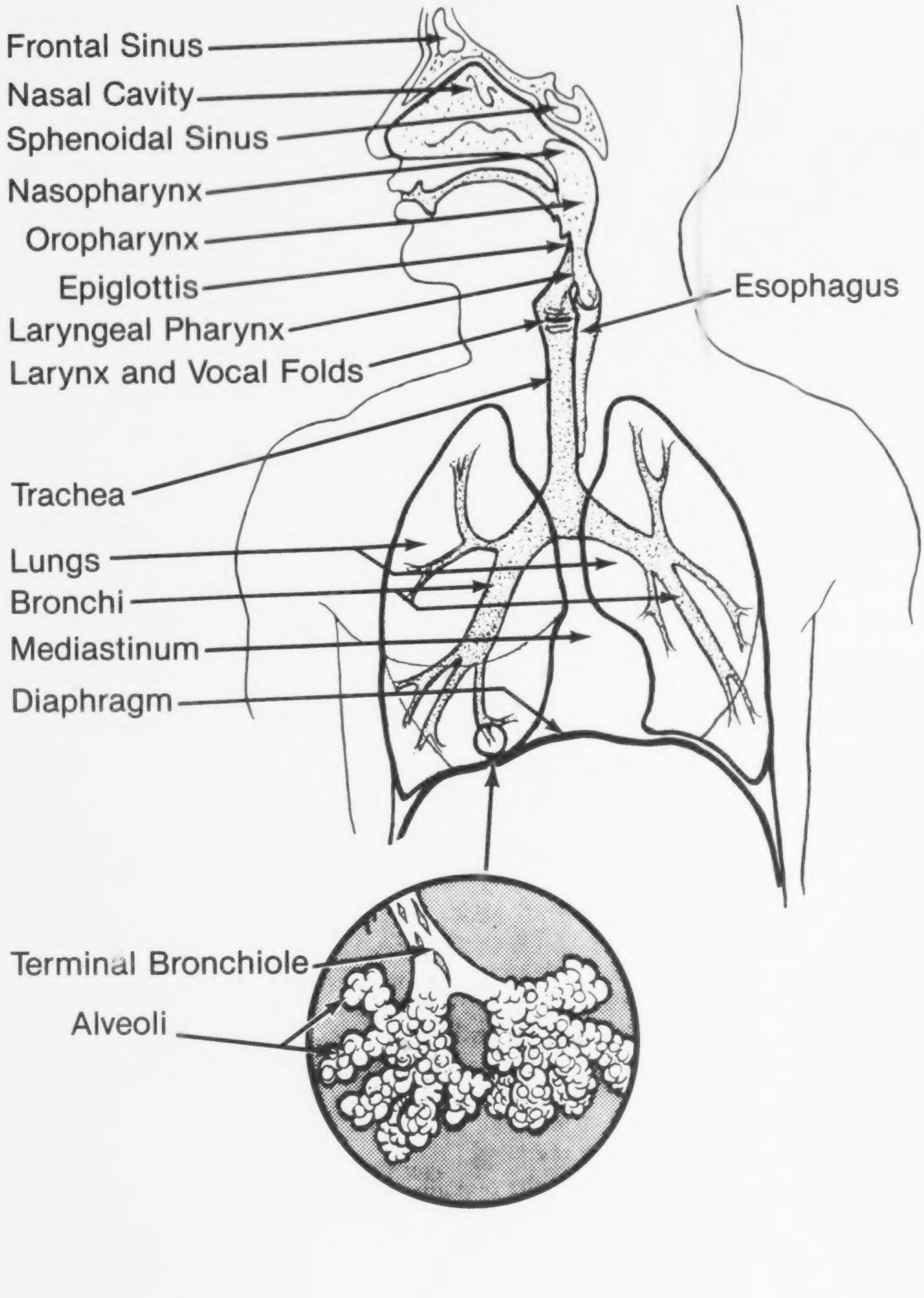
SUPPLEMENT #2 — DISEASES AND DISORDERS OF THE RESPIRATORY SYSTEM

Type	Disease	Description
Allergic/autoimmune	Asthma	Recurrent attacks of widespread narrowing of the airways, difficult breathing, wheezing, and cough
	Inflammatory emphysema	Swelling due to abnormal presence of air in body tissues or cavities
	Pneumoconiosis	Fibrosis of the lungs caused by prolonged inhalation of foreign material, particularly silica, coal, and asbestos
	Rhinitis	See description under "Infectious"
	Sinusitis	See description under "Infectious"
Congenital	Agenesis of lung	Abnormal development of lung
	Deviated nasal septum	Abnormal nasal septum
	Hypoplasia of lung	Defective or incomplete development of lung
	Polycystic lung	Abnormal sacs within the lung
	Tracheoesophageal fistula	Abnormal passage between trachea and esophagus
Degenerative	Emphysema	See description under "Allergic/autoimmune"
Infectious	Bronchitis	Inflammation of the mucous membrane of the bronchi
	Bronchopulmonary mycosis	Fungal invasion of bronchi and lungs
	Laryngitis	Inflammation of the larynx
	Pharyngitis	Inflammation of the pharynx
	Pleural effusion	Accumulation of fluid in the plural cavity
	Pleurisy	Inflammation of the pleura
	Pneumonia	Inflammation of the lungs; may be caused by viruses, bacteria, or chemical or physical agents

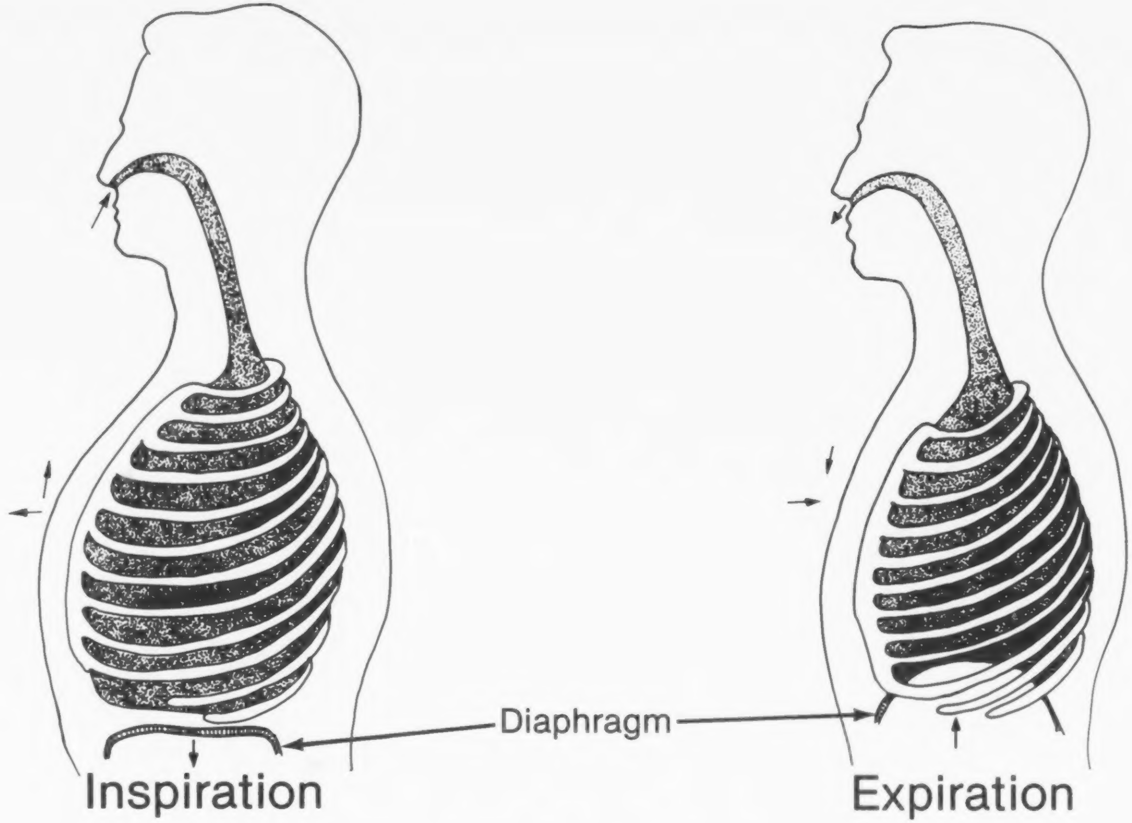
SUPPLEMENT #2

Type	Disease	Description
	Rhinitis	Inflammation of the mucous membrane of the nose accompanied by excessive mucous discharge
	Sinusitis	Inflammation of the mucous membrane of the sinus, especially of a paranasal sinus
	Tonsillitis	Inflammation of a tonsil or tonsils
	Tuberculosis	Formation of tubercles or lesions in the lungs; may be caused by several species of bacteria
Neoplastic	Bronchoadenoma	Benign tumor of epithelial tissue in bronchus
	Bronchogenic carcinoma	Malignant tumor in bronchus
	Carcinoma	A malignant cellular tumour
	Metastatic neoplasma	Overgrowth of tissue spread from one site to another
	Papilloma	An overgrowth of the papillae of the skin or mucous membrane
Psychiatric	Asthma	See description under "Allergic/autoimmune"
Toxic	Inhalation of toxins or caustic agents	Various clinical signs
Traumatic	Atelectasis	Shrunken or airless state of the lung, or a portion of it, due to failure of expansion or reabsorption of air from alveoli
	Pneumothorax	The presence of air or gas in the pleural cavity

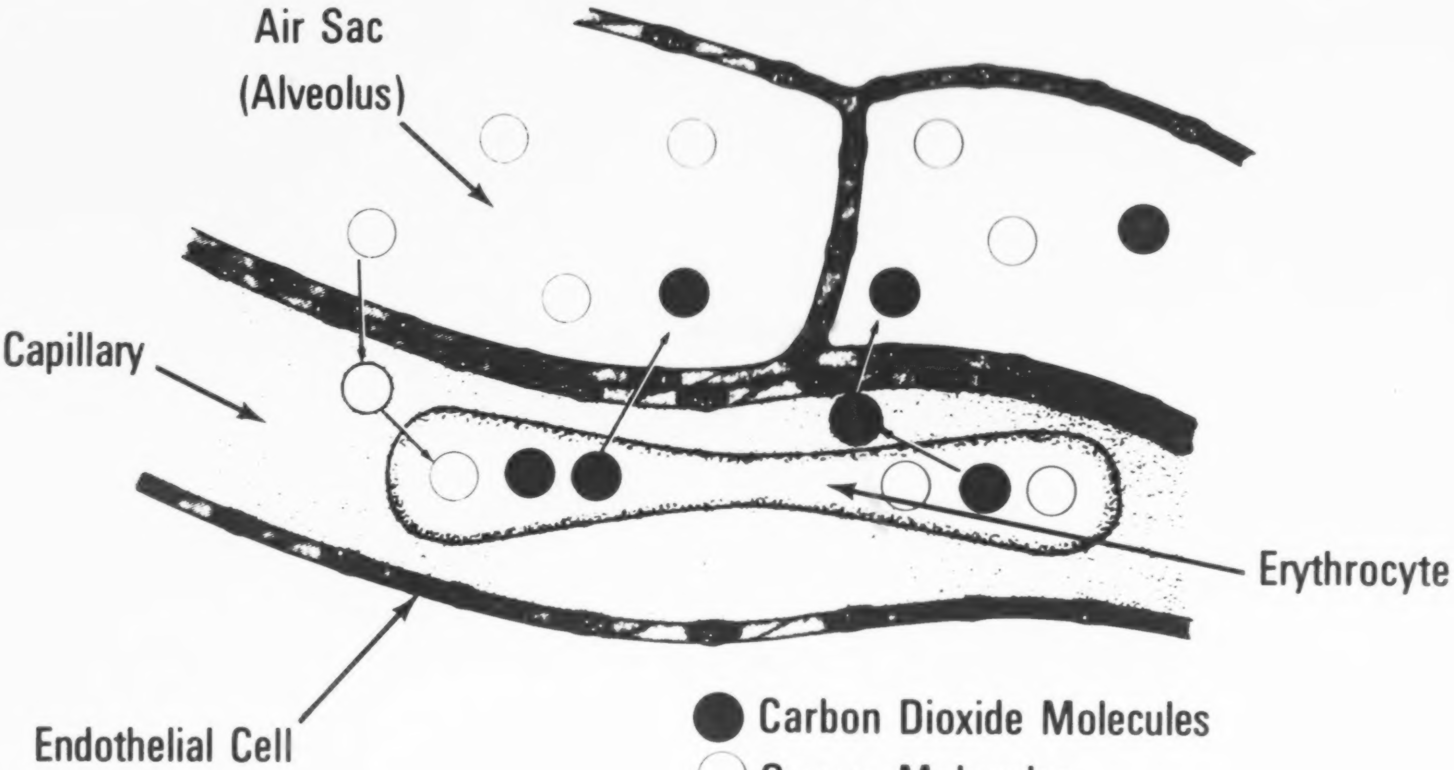
The Respiratory Tract



Process of Breathing



Exchange of Oxygen and Carbon Dioxide

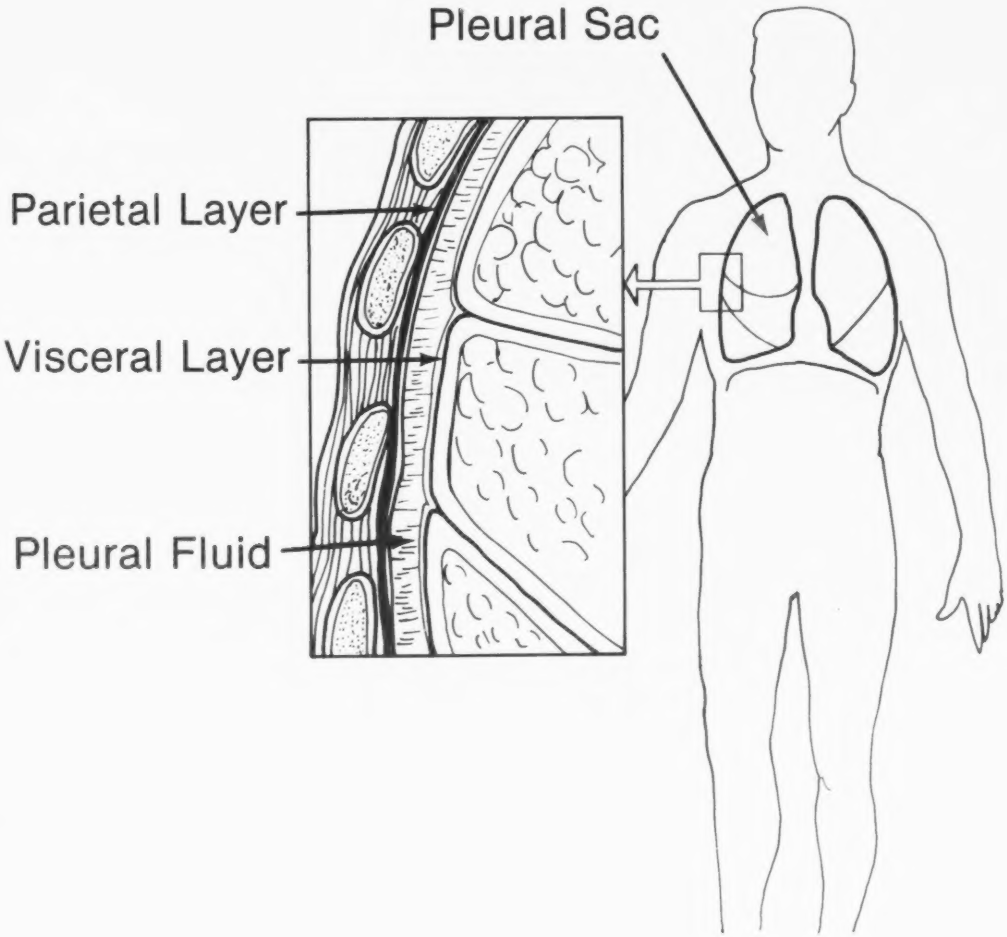


● Carbon Dioxide Molecules
○ Oxygen Molecules

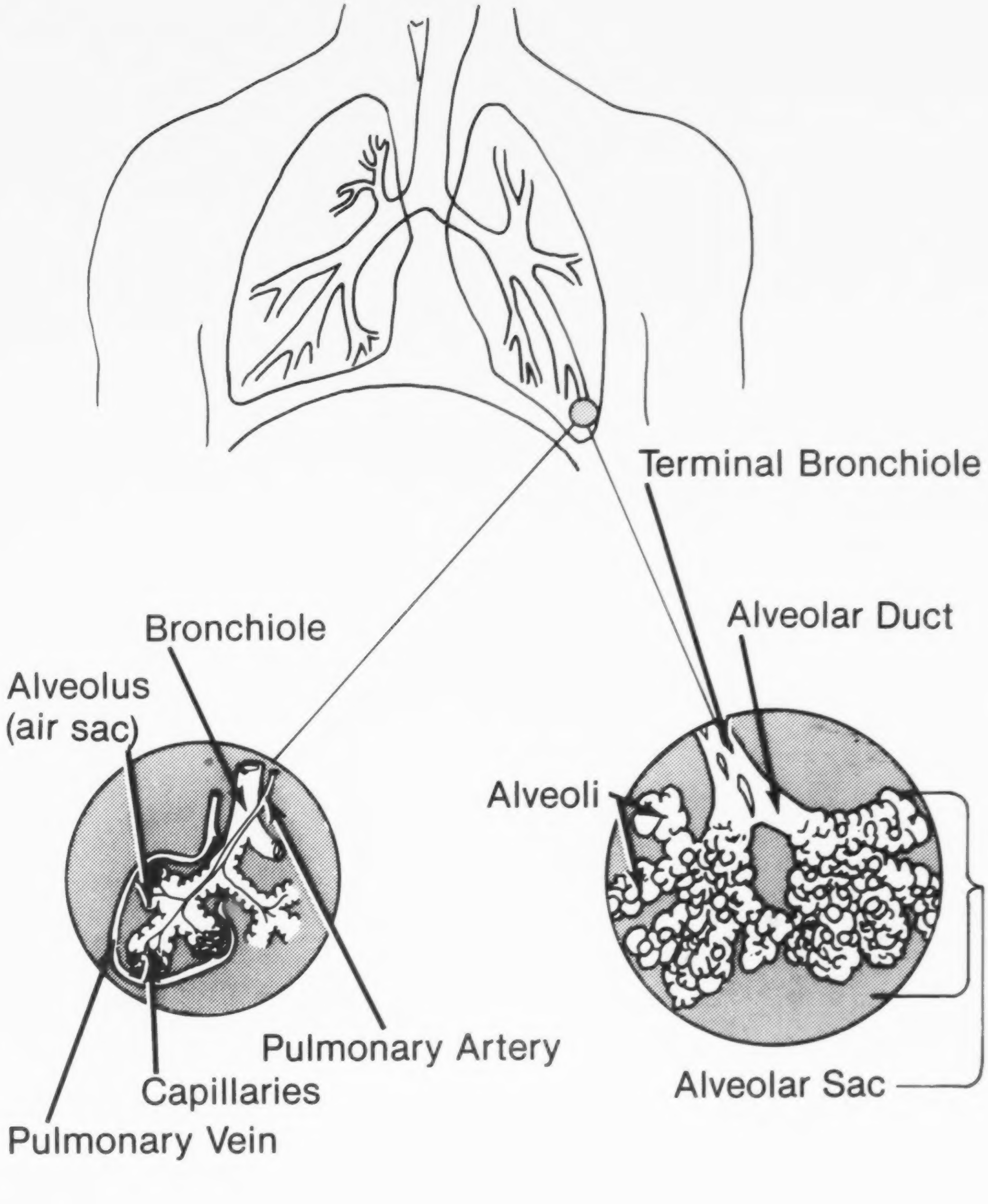
TM #3

AHC - 367-D

Pleura



Alveoli


Terminal Bronchiole
Alveolar Duct
Bronchiole
Alveolus (air sac)
Alveoli
Pulmonary Artery
Capillaries
Pulmonary Vein
Alveolar Sac

RESPIRATORY SYSTEM
UNIT V

ANSWERS TO ASSIGNMENT SHEET

Assignment Sheet #1

A. 1
B. 1
C. 4
D. 4
E. 1
F. 3
G. 2
H. 2
I. 3
J. 4
K. 3
L. 2
M. 2
N. 4
O. 4
P. 3
Q. 3
R. 3
S. 4
T. 3
U. 3
V. 1
W. 2
X. 1
Y. 1
Z. 2
AA. 2
BB. 3
CC. 1
DD. 4
EE. 3
FF. 1
GG. 3
HH. 2

RESPIRATORY SYSTEM
UNIT V

TEST

NAME ____ SCORE ________________

1. Match to their correct definitions terms associated with the respiratory system. Write the correct numbers in the blanks.

______a. Cavity or pouch; baglike part of an organ

______b. To draw in or out by suction

______c. Oxygen supplied to body through lungs

______d. Hairlike projections on cells lining the respiratory structures

______e. Body system dealing with the lungs and other structures responsible for the inhalation and exhalation of air

______f. Masses of lymphoid tissue found in nasopharynx

______g. Depression where ducts, nerves, or vessels enter or exit an organ

______h. Nostrils

______i. Expulsion of air from the lungs

______j. Voice box

______k. Masses of lymphoid tissue found in the oropharynx; also called the *pharyngeal tonsils*

______l. Drawing of air into the lungs

______m. Passageway that connects middle ear with pharynx

______n. Chest cavity

______o. Thin layer of tissue that lines the walls of body cavities, enclosing the contained organs and secreting a watery fluid

______p. Absence or cessation of breathing

1. Respiratory system
2. Adenoids
3. Aspiration
4. Cilia
5. Inspiration
6. Expiration
7. Hilum
8. Eustachian tube
9. Larynx
10. Apnea
11. Nares
12. Serous membrane
13. Sac
14. Ventilation
15. Thorax
16. Tonsils

2. State the purpose of the respiratory system.

____

____

____

TEST

3. Distinguish between characteristics of respiration and characteristics of breathing. Write an "R" in the blanks before characteristics of respiration and a "B" in the blanks before characteristics of breathing.

______a. Consists of inspiration, the inhaling of air; and expiration, the exhaling of air

______b. Is process of breathing as well as the utilization of oxygen and production of carbon dioxide by body cells

______c. Consists of external respiration (pulmonary respiration), which is the process of taking air into the lungs and passing oxygen from the alveoli (air sacs) into the blood; and internal respiration (cellular respiration), which is the process of passing oxygen from the blood into the cells and carbon dioxide from the cells into the blood

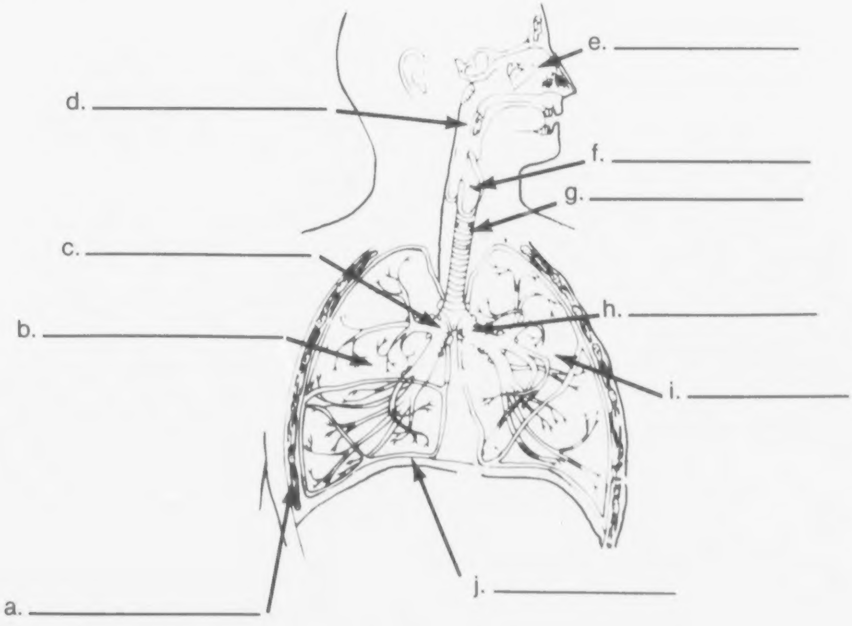
______d. Is controlled by the medulla oblongata and the pons, which are located in the brain stem

______e. Is mechanical movement of chest and diaphragm, resulting in the inhalation of air into and the exhalation of air out of the lungs

______f. Is controlled by carbon dioxide level in the blood

4. Identify the structures of the respiratory system illustrated below. Write the correct names in the blanks.

Intercostal muscles
Nose
Left lung
Right lung
Right bronchus
Left bronchus
Larynx
Pharynx
Trachea
Diaphragm



TEST

5. Select correct characteristics of the nose and its accessory structures. Write the correct numbers in the blanks.

______a. The nose consists of ______ nasal cavities lying between the roof of the mouth and the cranium.

1) Two
2) Three
3) Four
4) Five

______b. The openings in the front of the nose are known as *nostrils* or ______.

1) Anterior nares
2) Anterior septae
3) Facial nares
4) Posterior nares

______c. Nasal cavities are separated by a vertical partition known as the nasal ______.

1) Mediastinum
2) Mucous membrane
3) Nares
4) Septum

______d. The sinuses are cavities lined with ciliated mucous membranes that open into ______.

1) Lungs
2) Nasal cavities
3) The nasopharynx
4) The trachea

______e. The interior of the nose contains very vascular mucous membranes that bring ______ to surface cells.

1) Bacteria and foreign matter
2) Blood
3) Sputum and tears
4) Warmth and moisture

______f. The sinuses function to ______ air.

1) Detoxify
2) Extract carbon dioxide from
3) Purify and compress
4) Warm, moisten, and filter

______g. The sinuses consist of four sets of ______ each in the following locations: frontal, maxillary, sphenoidal, and ethmoidal

1) One cavity
2) Two cavities
3) Three cavities
4) Four cavities

TEST

______h. The eustachian tube opens into the ______, and equalizes air pressure between the external and middle ear.

1) Epiglottis
2) Esophagus
3) Nasopharynx
4) Oropharynx

______i. The nasolacrimal ducts communicate indirectly with the ______.

1) Cerebellum
2. Lacrimal gland
3) Thyroid gland
4) Vocal cords

6. List the functions of the nose.

a. ____

b. ____

c. ____

d. ____

7. Select correct characteristics of the pharynx. Write the correct numbers in the blanks.

______a. Is a muscular, tubelike structure about 5 inches (2.7 cm) long that extends from base of skull to the ______.

1) Epiglottis
2) Esophagus
3) Lungs
4) Trachea

______b. Is composed of muscle lined with ______.

1) Ciliated epithelium
2) Mucous membrane
3) Nasal septae
4) Tympanic membrane

______c. Serves as a passageway for both the respiratory and ______ tracts.

1) Coronary
2) Digestive
3) Excretory
4) Pulmonary

______d. Plays an important role in ______, especially in the production of different vowel sounds.

1) Comprehension
2) Hearing
3) Pronunciation
4) Speech therapy

TEST

______e. Is referred to as the ______.

1) Adam's apple
2) Nose
3) Throat
4) Windpipe

______f. Has ______ divisions.

1) One
2) Two
3) Three
4) Four

8. Match divisions of the pharynx to their correct descriptions. Write the correct numbers in the blanks.

______a. Lower portion lying immediately below hyoid bone and above larynx

______b. Upper portion lying behind nose and above palate; contains adenoids; communicates with eustacian tube

______c. Middle portion lying behind mouth and between palate and hyoid bone; contains two sets of tonsils: faucial or palatine tonsils and lingual tonsils (base of tongue)

1. Nasopharynx
2. Oropharynx
3. Laryngopharynx

9. Select correct characteristics of the larynx. Write the correct numbers in the blanks.

______a. Is the organ of voice; also called the ______.

1) Adam's apple
2) Cardiac notch
3) Transmitter
4) Voice box

______b. Consists of ______ pieces of cartilage connected by ligaments and moved by various muscles.

1) Six
2) Seven
3) Eleven
4) Nine

______c. Contains two pairs of bands (cords): False vocal cords that lie at upper end along sides of ______; and true vocal cords that lie directly under false vocal cords.

1) Larynx
2) Pharynx
3) Sinuses
4) Trachea

TEST

_____d. True vocal cords vibrate like reeds of a pipe organ and make vocal sounds, are set into vibration by the flow of air from the lungs, and incorporate the _______, a space (slit) between vocal folds.

1) Epiglottis
2) Glottis
3) Larynglottis
4) Subglottis

_____e. Is shaped like a _______ box with flat sides and a prominent ridge in front; and acts as a passageway for air between pharynx and trachea.

1) Oblong
2) Rectangular
3) Square
4) Triangular

_____f. Lies at upper end of _______ and just below pharynx.

1) Diaphragm
2) Esophagus
3) Right bronchus
4) Trachea

10. Name three characteristics of the trachea.

a. ____

____

b. ____

____

c. ____

____

11. Answer the following questions about the bronchi. Write the correct answers in the blanks.

a. Which of the two primary bronchi is shorter and more vertical than the other?

____

b. Why do the bronchi resemble the trachea in structure?

____

c. Each primary bronchi enters the lung at the hilum and immediately subdivides into smaller branches called what?

____

TEST

d. What substance do bronchi contain but bronchioles lack?

____

e. Bronchioles subdivide into smaller and smaller tubes. What are the microscopic branches at which they eventually end called?

____

f. What is the name sometimes given to the trachea, the two primary bronchi, and their many branches?

____

g. What is the function of the bronchi?

____

12. Select correct characteristics of the lungs. Write the correct numbers in the blanks.

_____a. The lungs, the essential organs of respiration, are ______ -shaped and are large enough to fill the pleural portion of the throacic cavity.

1) Cone
2) Cylindrical
3) Oval
4) Rectangular

_____b. The lungs are spongy, elastic, and contain the ______, which are essential for gaseous exchange.

1) Alveoli
2) Branches
3) Bronchi
4) Cilia

_____c. The pointed upper margin of the lung, or apex, extends slightly above the ______.

1) Clavicle
2) Primary bronchi
3) Thorax
4) Trachea

_____d. The broad inferior surface, or base of lung, lies on the ______.

1) Diaphragm
2) Intercostal muscles
3) Pericardium
4) Peritoneum

_____e. The left lung has an indentation for the heart called the ______.

1) Cardiac accommodater
2) Cardiac inferior surface
3) Cardiac notch or depression
4) Cardiac space or impression

TEST

_____f. The right lung is slightly _____ than the left lung.

1) Larger, heavier, and longer
2) Larger, heavier, and shorter
3) Smaller, heavier, and shorter
4) Smaller, lighter, and shorter

_____g. At birth the lungs are pink, but with increasing age they become a _____ color due to the inhalation of dust, pollution, and smoke.

1) Black
2) Dusky pink
3) Mottled blue
4) Mottled gray

_____h. When filled to capacity, the lungs can hold about _____ cubic centimeters of air, but only about 500 cubic centimeters are inhaled and exhaled in a normal breath.

1) 1,000
2) 3,500
3) 4,500
4) 5,500

_____i. The left lung has _____ lobes and the right lung has _____ lobes.

1) Two, three
2) Two, four
3) Three, two
4) Four, two

13. Name the functions of the lungs.

a. ______________________________

____

b. ______________________________

____

c. ______________________________

____

14. Select correct characteristics of the pleura. Write the correct numbers in the blanks.

_____a. The _____ is a serous membrane that contains the lungs and lines the thoracic cavity.

1) Coronal pleura
2) Parietal pleura
3) Pleural space
4) Visceral pleura

TEST

______b. The ______ covers the outer surface of each lung.

1) Diaphragm
2) Parietal pleura
3) Pleural space
4) Visceral pleura

______c. ______ space is the potential space formed by the visceral and parietal pleura lying adjacent to each other and contains the pleural fluid.

1) Alveolar
2) Cardiac
3) Pleural
4) Pulmonary

______d. Pleural fluid is secreted by the ______ to act as a lubricant.

1) Adipose membranes
2) Interstitial membranes
3) Mucous membranes
4) Serous membranes

15. Name and describe the divisions of the thorax (chest cavity).

a. ____

b. ____

c. ____

16. Match muscles that change the size of the throax to their correct actions. Write the correct numbers in the blanks.

______a. Contracts, flattens, and moves downward to enlarge the thoracic cavity

______b. Depress the ribs

______c. Elevate the ribs

______d. Relaxes, moving upward to decrease the size of the thoracic cavity

1. Diaphragm on inspiration
2. Diaphragm on expiration
3. External intercostal muscles
4. Internal intercostal muscles

17. Select from the following list ways to maintain a healthy respiratory system. Write an "X" in the blank before each correct answer.

______a. Exercise weekly to build lung capacity

______b. Wear approved protective clothing and equipment when engaged in a hazardous occupation

______c. Maintain desirable body weight

______d. Do not smoke

TEST

______e. Use relaxed posture to avoid muscle strain

______f. Avoid working in damp air

18. Describe the education and duties of one health occupation related to the respiratory system.

____

____

____

____

____

____

____

RESPIRATORY SYSTEM
UNIT V

ANSWERS TO TEST

1. a. 13
   b. 3
   c. 14
   d. 4
   e. 1
   f. 16
   g. 7
   h. 11
   i. 6
   j. 9
   k. 2
   l. 5
   m. 8
   n. 15
   o. 12
   p. 10

2. To bring air and blood into intimate contact so that oxygen can be added to the blood and carbon dioxide can be removed

3. a. B
   b. R
   c. R
   d. B
   e. B
   f. R

4. a. Intercostal muscles
   b. Right lung
   c. Right bronchus
   d. Pharynx
   e. Nose
   f. Larynx
   g. Trachea
   h. Left bronchus
   i. Left lung
   j. Diaphragm

5. a. 1
   b. 1
   c. 4
   d. 2
   e. 4
   f. 4
   g. 2
   h. 3
   i. 2

6. a. Serves as passageway for air going to lungs
   b. Warms, moistens, and filters air of impurities
   c. Serves as the organ of smell
   d. Aids in pronunciation, especially of *n, m,* and *ng*

7. a. 2
   b. 2
   c. 2
   d. 3
   e. 3
   f. 3

ANSWERS TO TEST

8.
   a. 3
   b. 1
   c. 2

9.
   a. 4
   b. 4
   c. 1
   d. 2
   e. 4
   f. 4

10. Answer should include any three of the following

   a. Trachea is a mucous membrane lined tube of smooth muscle about 4 ½ inches long (11.4 cm) and held open by C-shaped rings of hyaline cartilage, the open portion of which face the esophagus
   b. Trachea is also called the windpipe
   c. Trachea provides an open passageway for air from the larynx to the bronchi of the lungs
   d. Obstruction for even a few minutes can cause death from asphyxiation

11.
   a. Right
   b. Because they contain cartilage rings and ciliated mucous lining
   c. Secondary bronchi
   d. Cartilage
   e. Alveolar ducts (alveoli)
   f. Bronchial tree
   g. Serves as a passageway for air to reach the alveoli so that gaseous exchange between air and blood can occur

12.
   a. 1
   b. 1
   c. 1
   d. 1
   e. 3
   f. 2
   g. 4
   h. 3
   i. 1

ANSWERS TO TEST

13. Answer should include any following

    a. Act as essential organs of respiration by distributing air throughout the lungs to the alveoli
    b. Furnish a place where air can come in close enough contact with blood for gaseous exchange to occur
    c. Act as an excretory organ because an individual loses about 400 cubic centimeters of moisture a day in expired air

14. a. 2
    b. 4
    c. 3
    d. 4

15. a. Pleural cavities (2) — Area occupied by lungs
    b. Mediastinum — Space between lungs
    c. Pericardium — Area occupied by heart

16. a. 1
    b. 4
    c. 3
    d. 2

17. b, c, d

18. Answer should include description of one of the occupations described in Section XVIII of the Information Sheet

CIRCULATORY SYSTEM
UNIT VI

SUGGESTED ACTIVITIES

I. Unit contents

  A. Objective sheet

  B. Suggested activities

  C. Supplements

    1. Supplement #1 — Diagnostic Tests Used to Assess the Circulatory System

    2. Supplement #2 — Blood Studies Used to Diagnose Diseases and Disorders

    3. Supplement #3 — Diseases and Disorders of the Circulatory System

    4. Supplement #4 — Descriptions of Common Arrhythmias

    5. Supplement #5 — Circulatory System Crossword Puzzles

    6. Supplement #6 — Circulatory System Word Search

  D. Transparency masters

    1. TM #1 — Structures of the Heart

    2. TM #1A — Structures of the Heart Overlay: Layers and Chambers

    3. TM #1B — Structures of the Heart Overlay: Vessels

    4. TM #1C — Structures of the Heart Overlay: Valves and Conducting Structures

    5. TM #2 — Blood Flow

    6. TM #3 — Normal EKG Pattern

  E. Information sheet

  F. Assignment Sheet #1 — Trace the Flow of Blood Through the Heart

  G. Answers to assignment sheet

  H. Test

  I. Answers to test

SUGGESTED ACTIVITIES

II. Instructor's guide

A. Review unit and plan presentation.

B. Order materials to supplement unit.

1. Films

(NOTE: The following films are available on a free-loan basis to Oklahoma instructors. Oklahoma teachers may order from the State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364. Out-of-state teachers must order from the addresses listed with the films.)

a. *Heart and Circulatory System*, 11 minutes, 1972, available from Films, Inc., 733 Green Bay Road, Wilmette, Illinois 60091.

(NOTE: In this film, animation of microscopic detail and close-ups of three-dimensional models illustrate the actual motions of the heart muscle and its relation to the unidirectional flow of blood. The film also illustrates the operation of the circulatory system as it transports nutritive substances for energy and growth, supports the exchange of gases for respiration, and removes body wastes.)

b. *I am Joe's Heart*, 26 minutes, 1973, available from Pyramid Films, P.O. Box 1048, Santa Monica, California 90406.

(NOTE: This film combines live color sequences with unique three-dimensional animation to create a vivid understanding of man's most vital organ.)

2. Audiovisual programs

(NOTE: The following programs—available as filmstrips/cassettes or as videocassettes—may be obtained from the Trainex Corporation, P.O. Box 116, Garden Grove, California 92642.)

a. *How Your Heart and Circulation Work*

b. *Normal Heart and EKG*

c. *How to Take an Electrocardiogram*

d. *My Heart Attack*

e. *Stress, Tension, and the Relaxation Response*

f. *Exercising for Fitness and Health*

g. *Understanding the Cardiac Workup*

SUGGESTED ACTIVITIES

3. Polar motion spinner and transparency kits

   (NOTE: These transparency kits enable you to make transparencies that show anatomy and physiology in action. They are available in various body systems. Write for catalog of programs available and for prices: American Animation, Incorporated, 300 Mill Street, Moorestown, New Jersey 00157.)

4. Transparencies and competency profiles

   (NOTE: Transparencies and competency profiles for this book are available from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

5. Film, filmstrip, and overhead projectors as applicable

6. Model of the heart for demonstration purposes

7. Pamphlets and brochures related to a healthy cardiovascular system

   (NOTE: Order pamphlets and brochures from the Oklahoma Heart Association, P.O. Box 11376, Oklahoma City, Oklahoma 73112.)

C. Introduce unit.

- Prepare a bulletin board with articles from newspapers, magazines, or journals on conditions, treatment, research, and other information related to the cardiovascular system.

- Show film *I Am Joe's Heart*. Discuss the need for a healthy routine to prevent diseases and disorders related to the heart and cardiovascular system.

D. Provide students with unit.

E. Discuss unit and specific objectives.

- Emphasize the health careers related to the circulatory system.

- Prepare a bulletin board or scrapbook with pictures of persons in different health occupations that relate to the cardiovascular system.

- Discuss related health occupations that may assist in caring for patients with cardiovascular diseases and disorders.

- Discuss the need to have background knowledge of the general anatomy and physiology of the cardiovascular system for all health occupations.

F. Individualize instruction to meet learning needs and interests of students.

G. Discuss information sheet.

SUGGESTED ACTIVITIES

1. Use Information Sheet, Section I, to introduce students to terms and definitions associated with the circulatory system.
    - Point out that A-V bundle is also called *bundle of His*, named for Wilhelm His, Jr., a German physician.
    - Use games such as Bingo, Concentration, Hangman, and others to help students learn terms.
    - Have students complete puzzles and word search in Supplements #5 and #6.
2. Use Information Sheet, Section II, to discuss the functions of the circulatory system.
    - Use Transparency #3 to illustrate your discussion of normal heart pattern.
    - Show film *Heart and Circulatory System.*
    - Illustrate your discussion with appropriate transparencies from the polar motion series.
    - Discuss the many functions and their interrelationships. Relate the system's functions to the need for healthy maintenance of the system.
    - Provide students with Supplement #4 for future reference.
3. Use Information Sheet, Sections III and IV, to teach the anatomy of the heart and the circulatory system.
    - Use Transparencies #1 and #2 to illustrate your discussion.
    - Discuss the differences between arteries and veins and how they work together to move blood through the system.
    - Use an animal heart or a model of a heart to show the anatomy of the various structures.
    - Have students complete Assignment Sheet #1.
4. Use Information Sheet, Sections V through X, to acquaint students with the normal anatomy and physiology of the blood.
    - Use games to teach students terms associated with the blood.
    - Take students to the laboratory to view different blood cells under the microscope to help them learn the differences in the cell structures.
    - Take students on a field trip to a clinical laboratory so that they may observe various tests performed on the blood.
    - Discuss the significance of blood types. Have students' blood typed if possible

SUGGESTED ACTIVITIES

5. Use Information Sheet, Section XI, to explore the various health occupations that relate specifically to the care of patients with circulatory system problems.

   - Provide students with Supplements #1 through #3 for future reference.
   - Arrange for field trips to observe the job tasks performed by professionals in various health occupations.
   - Ask a panel of individuals from related health occupations to visit the class to discuss their specialties, the education involved, the disadvantages and advantages, and the typical salaries.

H. Review material and give test.

I. Critique test and discuss in class.

J. Reteach and retest if necessary.

K. Complete appropriate section of competency profiles.

III. Unit references

A. Boyles, Marcia V., Margaret K. Morgan, and Mary H. McCaulley. *The Health Professions*. Philadelphia: W.B. Saunders Company, 1982.

B. Galliart, Barbara. *Intervenous Therapy*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1983.

C. Nursing80 Books. *Monitoring Fluid and Electrolytes Precisely*. Horsham, Pennsylvania: Intermed Communications, Inc., 1979.

D. Reid, Jamee Noell. *Practical Nursing: Volume III*. Stillwater, Oklahoma: Oklahoma State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1984.

CIRCULATORY SYSTEM
UNIT VI

SUPPLEMENT #1 — DIAGNOSTIC TESTS USED TO ASSESS THE CIRCULATORY SYSTEM

Sophisticated equipment and techniques are being developed everyday to help assess the circulatory system. A physician performing a routine physical exam that includes percussion, palpation, auscultation, and blood pressure can initially aid in diagnosing a cardiovascular disease or determine that further testing is required. The common tests listed below have been developed to assess specific functions and structures of the circulatory system. Many of the tests are performed by or assisted by specially trained technicians. In the future, artificial hearts or transplanted hearts may be common. New occupational areas will be developed because of the need for trained personnel in constructing the devices, or maintaining and monitoring of the patient with new artifical or transplanted hearts.

Diagnostic Test	**Related Occupation**	**Description**	**Purpose**
Cardiac catheterization	Cardiac lab technician	Catheter is introduced into a blood vessel and opaque dye is passed into the vena cava, right ventricle, and pulmonary artery for visualization through radiography	Measure pressure as it passes through chambers of heart, and determine oxygen content of blood as it passes through structures of the heart Check for defects
Central venous-pressure (CVP)	Physician performs; nurse monitors	Small catheter is passed through a vein into superior to inferior vena cava and attached to a manometer filled with solution that fluctuates according to condition of heart	Measure pressure in right atrium (NOTE: An increase in pressure may indicate weakening heart action and impending failure; a decrease may indicate a need for additional fluid for circulation.)
Coronary angiogram	Cardiac lab technician	Opaque dye is injected through a cardiac catheter via a selected large blood vessel to permit visualization of heart	Aid in diagnosing congenital heart defects; and structural defects of heart, valves, and large vessels
Coronary arteriogram	Cardiac lab technician	Opaque dye is injected through a cardiac catheter into coronary arteries for visualization	Aid in diagnosing coronary artery malfunction or occlusion
Echocardiogram	EKG/EEG technician	Sound waves are used to produce a two- or three-dimensional view of heart and blood flow	Assess size of heart Detect presence of excess fluid in pericardial sac Measure size of heart chambers

SUPPLEMENT #1

Diagnostic Test	Related Occupation	Description	Purpose
Electrocardiogram	EKG/EEG technician	Electrodes are placed on specified body parts to pick up electrical impulses of the heart and provide a graph of heart activity	Study activity of heart muscle Record changes in heart rhythm and rate; detect cardiac damage
Nuclear scan	Nuclear technician	Thallium is injected into a selected vein; after ten minutes' absorption time, a scanner is used to pick up images of the heart (NOTE: An additional procedure used with the nuclear scan is the stress method. After the thallium is injected, the patient is asked to pump a small pedaled device, as on a bicycle, to a maximum stress stage. Images are taken five minutes later.)	Obtain images in anterior, left anterior, oblique, and left lateral positions
Swan-Ganz catheterization	Physician performs; nurse monitors	Catheter with balloon near tip is passed through a vein into the right heart into pulmonary artery; balloon is inflated enough to block the flow of blood from right heart to lung	Measure the back pressure in pulmonary artery and the pressure transmitted back from left arterial chamber of heart (NOTE: The Swan-Ganz catheter also permits measurement of pulmonary pressure [*wedge pressure*] in an occluded vessel.)
Treadmill (stress) test	Nurse, EKG/EEG technician, or physical therapist	Stress to heart function is monitored as patient performs walking or pacing exercises on a moving track	Determine amount of stress tolerated by heart

CIRCULATORY SYSTEM
UNIT VI

SUPPLEMENT #2 — BLOOD STUDIES USED TO DIAGNOSE DISEASES AND DISORDERS OF THE CIRCULATORY SYSTEM

In almost every health field, a basic knowledge of blood values and diagnostic blood studies is important. Each person—from the one performing the procedure to the one who interprets and treats according to the results—plays an important role in the care of the patient.

It is most important that normal values of the components of the blood are known so that any abnormalities can be recognized and interpreted quickly. The following tests are the most commonly performed. Other specific tests have been developed for certain diseases and disorders that are not listed here.

TEST	DESCRIPTION
Blood chemistry test	Indicates levels of blood components—electrolytes, enzyme levels—from venous blood sample
Blood culture and sensitivity	Indicates types or organisms present in patient's blood, and indicates which antibiotics would be most effective in fighting a specific organism
Bone marrow	Indicates blood disorders, infections, and malignant diseases; the aspiration of bone marrow for study is usually performed on the iliac crest or the sternum
Circulation time	Indicates length of time required for blood from an arm vein to reach the tongue or lungs; a substance is injected into an arm vein and the length of time is measured until the patient tastes or smells the substance; average arm-to-tongue time is 9 to 16 seconds, an average arm-to-lung time is 11 seconds
Clotting time	Indicates length of time it takes for patient's blood to form a clot
Hematocrit	Indicates percentage of red blood cells in a given amount of blood, separate from the plasma; normal value is 38 to 50 percent
Hemoglobin measurement	Indicates amount of pigment in red blood cells that contains iron; normal hemoglobin is 12 to 18 grams per 100 milliliters blood
Prothrombin time (protime)	Indicates first stage of blood clotting time; anticoagulants increase the blood clotting time, and this test measure the effectiveness of the therapy

SUPPLEMENT #2

TEST	DESCRIPTION
Sedimentation rate	Indicates length of time required for blood cells to settle in an anticoagulant solution; the normal sedimentation rate is about 5 minutes per millimeter but increases as a result of inflammatory processes in diseases
Total red cell count	Indicates total volume of red corpuscles (erythrocytes) in circulatory system; normal erythrocyte value is 4,200,000 to 6,200,000 per cubic millimeter
Total white cell count	Indicates total volume of white corpuscles (leukocytes) in circulatory system; normal leukocyte values are 4,500 to 11,000 per cubic millimeter

CIRCULATORY SYSTEM
UNIT VI

SUPPLEMENT #3 — DISEASES AND DISORDERS OF THE CIRCULATORY SYSTEM

Aneurysm—Wall of an artery becomes weakened from disease or injury and may become distended at the weakened place; this distension is called an aneurysm

Angina pectoris—Decreased flow of blood from the coronary arteries and oxygen deficiency to the myocardium; usually the result of atherosclerosis

Arteriosclerosis—Degeneration and hardening of artery walls caused by chronic inflammation and scarring; this process tends to weaken the walls of the vessels and predispose to hemorrhage, thrombosis, and hypertension, and it appears to be related to the aging process

Atherosclerosis—Type of arteriosclerosis that affects large arteries such as the aorta and its major branches, the coronary arteries, and the large arteries of the brain; it is the underlying cause of most infarcts, or death of tissue, in the heart and brain

Bacterial endocarditis—Inflammation of the endocardium, the serous membrane that lines the inside of the heart and covers the flaps of the valves; caused by bacteria and may be acute or subacute

Buerger's disease—Acute inflammation of the arteries and veins of the lower extremities which leads to the development of lesions that eventually cause thrombus formation; this results in decreased blood flow to the legs and feet; gangrene and ulcers are frequent complications

Cardiac arrhythmias—Disorders of the rate and rhythm of the heart

Congenital heart disease—Includes a wide variety of conditions representing developmental errors that occur during intrauterine life or at the time of birth; these conditions may involve the heart itself, its valves, both valves and heart, and may include blood vessels

Congestive heart failure—Occurs when cardiac output can no longer meet the needs of the body tissues; may be the result of bacterial endocarditis, damage from rheumatic fever, syphilitic heart disease, arteriosclerosis, hypertension, or myocardial infarction

Hypertension and hypertensive heart disease—Hypertension refers to the elevation of blood pressure; untreated, the condition may affect the kidneys, heart, brain, and eyes; death often results from a cerebrovascular accident or uremia

Lymphangitis—Acute inflammation of the lymph vessels caused by the invasion of bacteria such as the streptococcus organism; characterized by red streaks that follow the course of the vessel involved

Myocardial infarction—Dead heart muscle usually resulting from occlusion of one of the coronary arteries or its branches; may be caused by a coronary thrombosis or by vasoconstriction or atherosclerosis

SUPPLEMENT #3

Raynaud's disease—Chronic condition affecting primarily women in which vasospasm of the arteries of the hands or feet leads to blanching of the fingers or toes, accompanied by a sensation of coldness and numbness followed by throbbing pain, tingling, and swelling; often triggered by cold or emotional distress

Rheumatic fever—Primarily a disease of children and young people, occuring between ages 5 and 15; more than half the patients with rheumatic fever develop inflammation of the heart, which may be followed by a systolic murmur, formation of scar tissue on the heart, and leaky valves

Septicemia—Systemic disease caused by the presence of pathogenic microorganisms in the body

Thrombophlebitis—Simple phlebitis is the inflammation of the wall of a vein, whereas thrombophlebitis is inflammation with the presence of a blood clot in the vein

Varicose veins—Greatly and permanently dilated veins in the lower extremities, in which the blood flow becomes stagnant

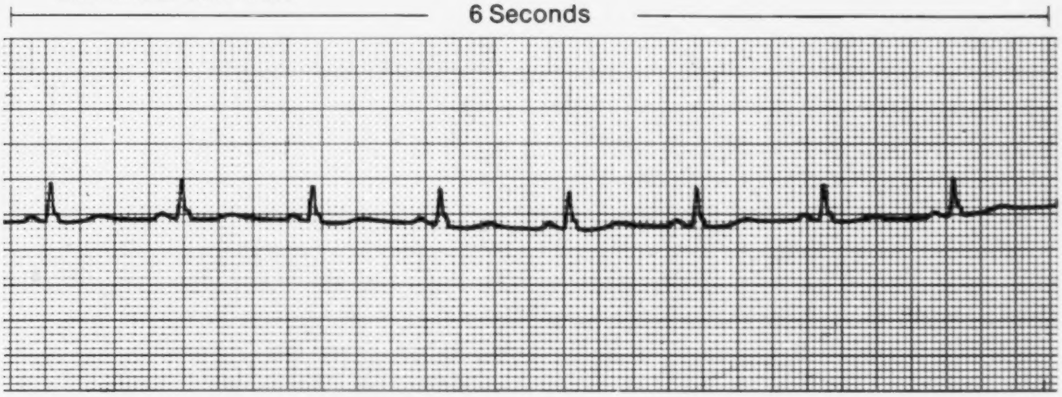
CIRCULATORY SYSTEM
UNIT VI

SUPPLEMENT #4 — DESCRIPTIONS OF COMMON ARRHYTHMIAS

A. Normal sinus rhythm

(NOTE: A normal sinus rhythm occurs with a normal rate of 60 to 100 beats. A regular pattern is seen on a basic EKG tracing.)

EXAMPLE: 80/minute



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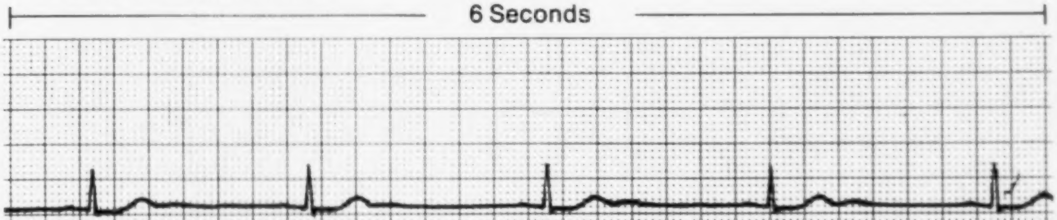
B. Sinus bradycardia — Pacemaker at S-A node with below 60 and a regular rhythm

(NOTE: Sinus bradycardia can be seen in athletes and laborers who have normally enlarged hearts from strenuous exercise. Increased cranial pressure, hypothyroidism, digitalis toxicity, and emotional states can also cause sinus bradycardia.)

EXAMPLE: 50/minute



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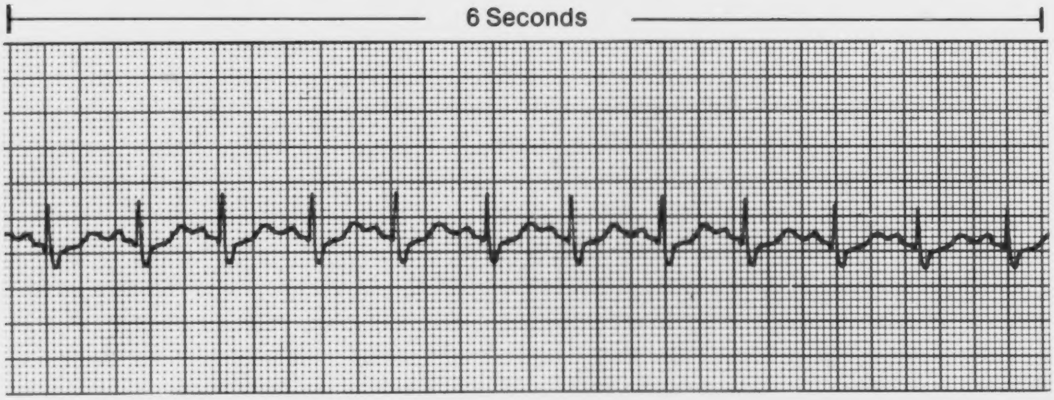
SUPPLEMENT #4

C. Sinus tachycardia — Pacemaker at S-A node with regular rate but above 100 beats per minute

(NOTE: Sinus tachycardia can increase the workload of the heart to the point of decompensation. This condition can occur in normal hearts as a result of physiologic responses to pain, fever, hemorrhage, shock, anemia, strenuous exercise, or strong emotions. Increased heart rate that often accompanies myocardial infarction or coronary artery disease can cause cardiac insufficiency.)

EXAMPLE: 120/minute



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CIRCULATORY SYSTEM
UNIT VI

SUPPLEMENT #5 — CIRCULATORY SYSTEM CROSSWORD PUZZLES

Having trouble remembering all of the terms and definitions associated with the circulatory system? Complete the following puzzles to refresh your memory and to help you learn the terms.

Puzzle #1 — Terms associated with blood

Use the clues below and Sections V through X of the Information Sheet to complete the following crossword puzzle of terms associated with blood.

ACROSS

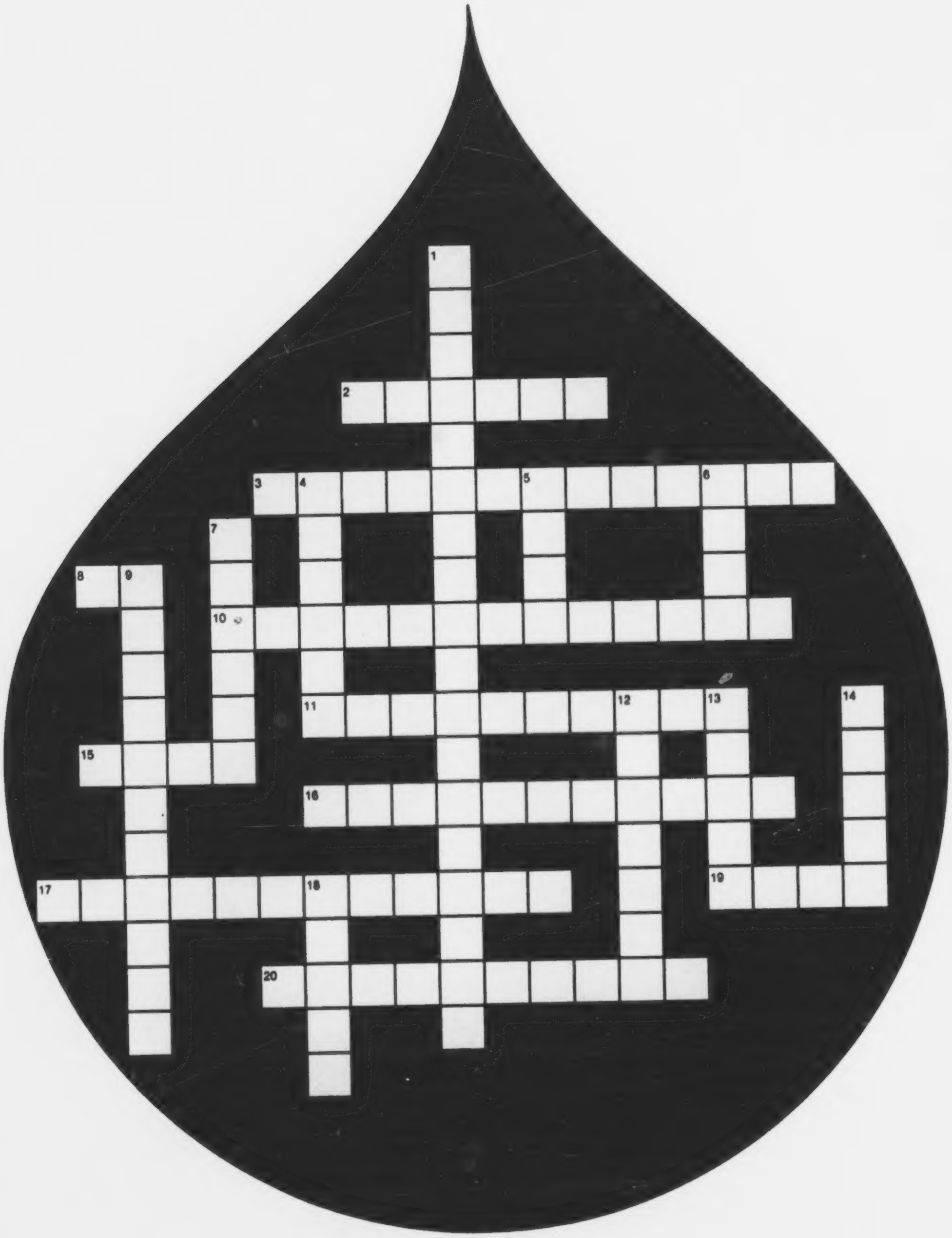
2. Deficiency of red blood cells or hemoglobin or both
3. Antibody fraction of blood (2 wds)
8. Antigen in positive blood
10. Agent that delays or prevents formation of blood clot
11. Blood cells
15. Your student organization (abbr)
16. Injection of one person's blood into the blood vessels of another person
17. White blood cells having a lobed nucleus and granules in the cytoplasm
19. Type
20. Abnormal discharge of blood

DOWN

1. Insertion of hollow needle into marrow cavity of a flat bone to withdraw a sample of bone marrow (3 wds)
4. Of the aorta
5. Organ of respiration
6. Not fat
7. Liquid portion of the blood
9. State of chemical balance between a cell and its environment
12. Remaining; enduring
13. Depression of body function due to failure of circulation
14. Any of a group of fat or fatlike substances that are insoluble in water
18. Extremely fat

SUPPLEMENT #5

Puzzle #1



SUPPLEMENT #5

Puzzle #2 — Terms associated with the circulatory system

Use the following clues and Sections I through V of the Information Sheet to complete the crossword puzzle on the next page for terms associated with the circulatory system.

ACROSS

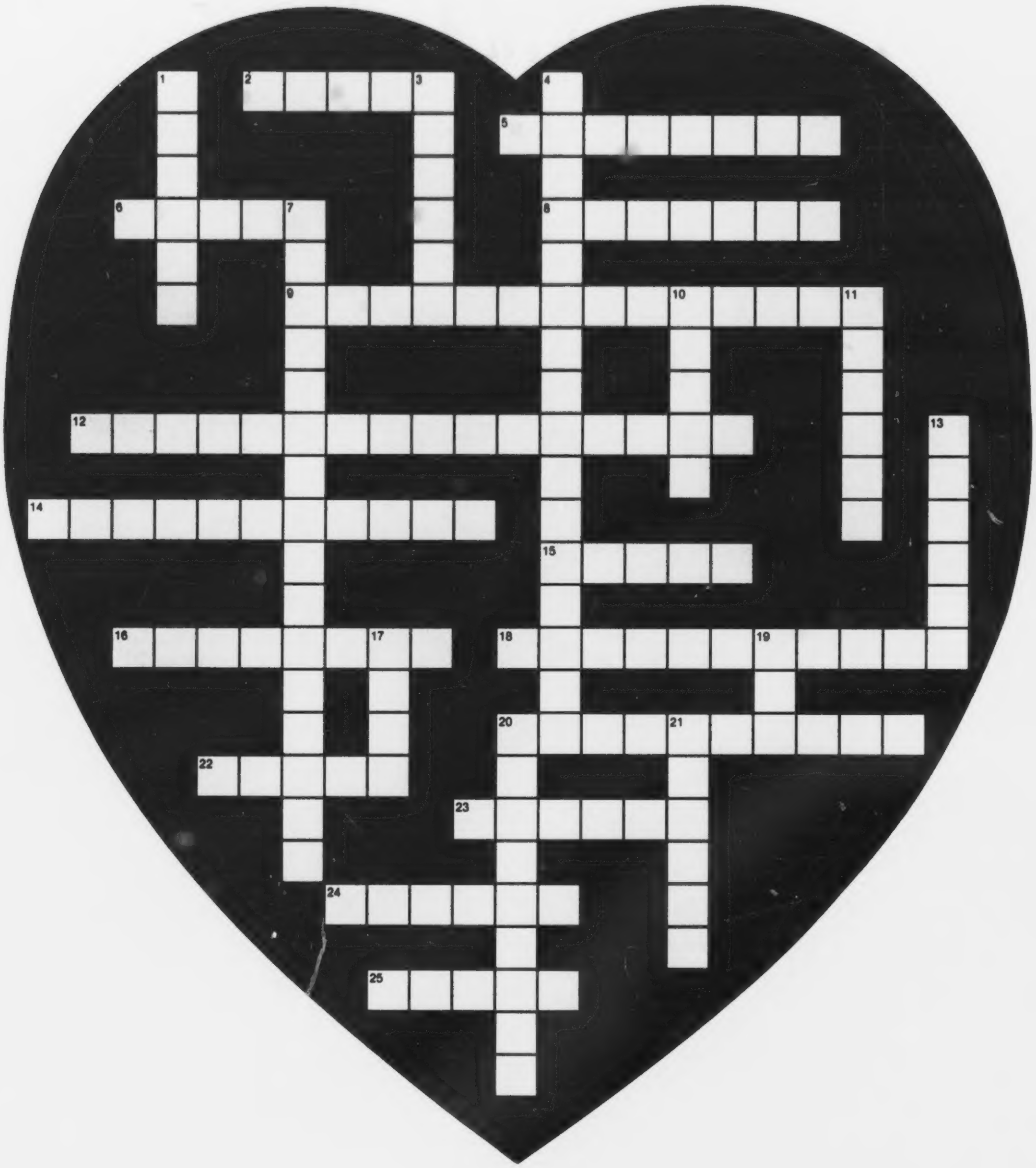
2. Largest artery
5. Fibers that form part of A-V bundle
6. Vessels that carry blood *to* heart
8. Principal artery of neck
9. Vessels from lungs to heart (2 wds)
12. Large vein in body; empties into right atrium of heart (3 wds)
14. Smooth layer of cells that lines inside of heart and forms valves
15. Side of heart in which venae cavae are located
16. Group of cardiac muscle fibers that supplies muscular connection between atria and ventricles (wds)
18. Double membrane that covers heart and secretes lubricating fluid
20. Middle and thickest layer of heart muscles
22. Muscular organ that maintains circulation of blood
23. One of the gases in blood plasma
24. Very small vein
25. Veins or arteries related to kidneys

DOWN

1. Vessel that carries blood *from* the heart
3. One of two upper chambers or compartments of the heart
4. Vessel situated beneath the clavicle (2 wds)
7. The higher partner of 12 Across (3 wds)
10. Membranous fold that prevents return of blood through a vessel
11. Pacemaker (2 wds)
13. Wall in middle of heart that divides it into right and left sides
17. Side of heart connected to pulmonary veins
19. Color of blood
20. Artery leading to upper jaw
21. Specialized muscle fibers on floor of atrium

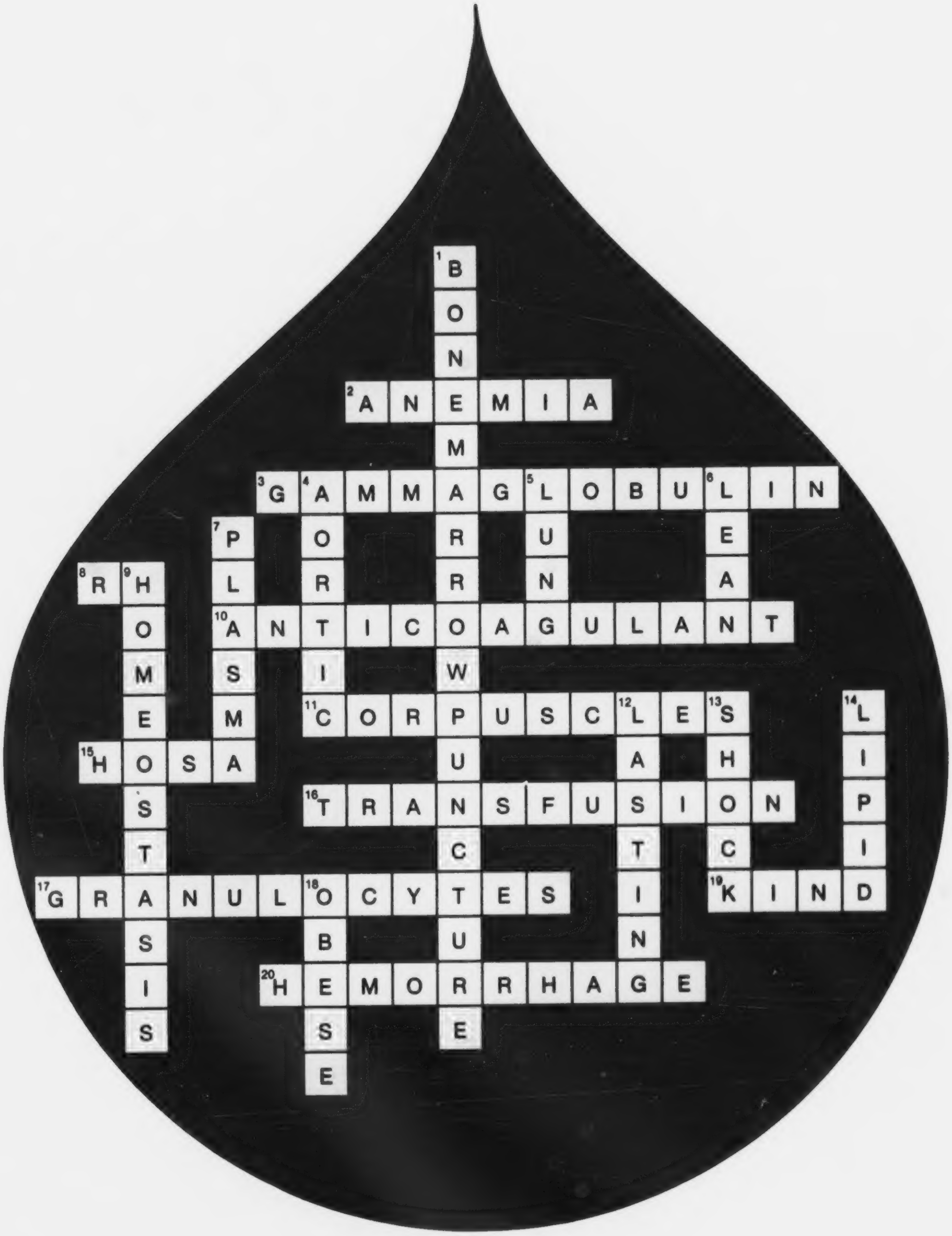
SUPPLEMENT #5

Puzzle #2



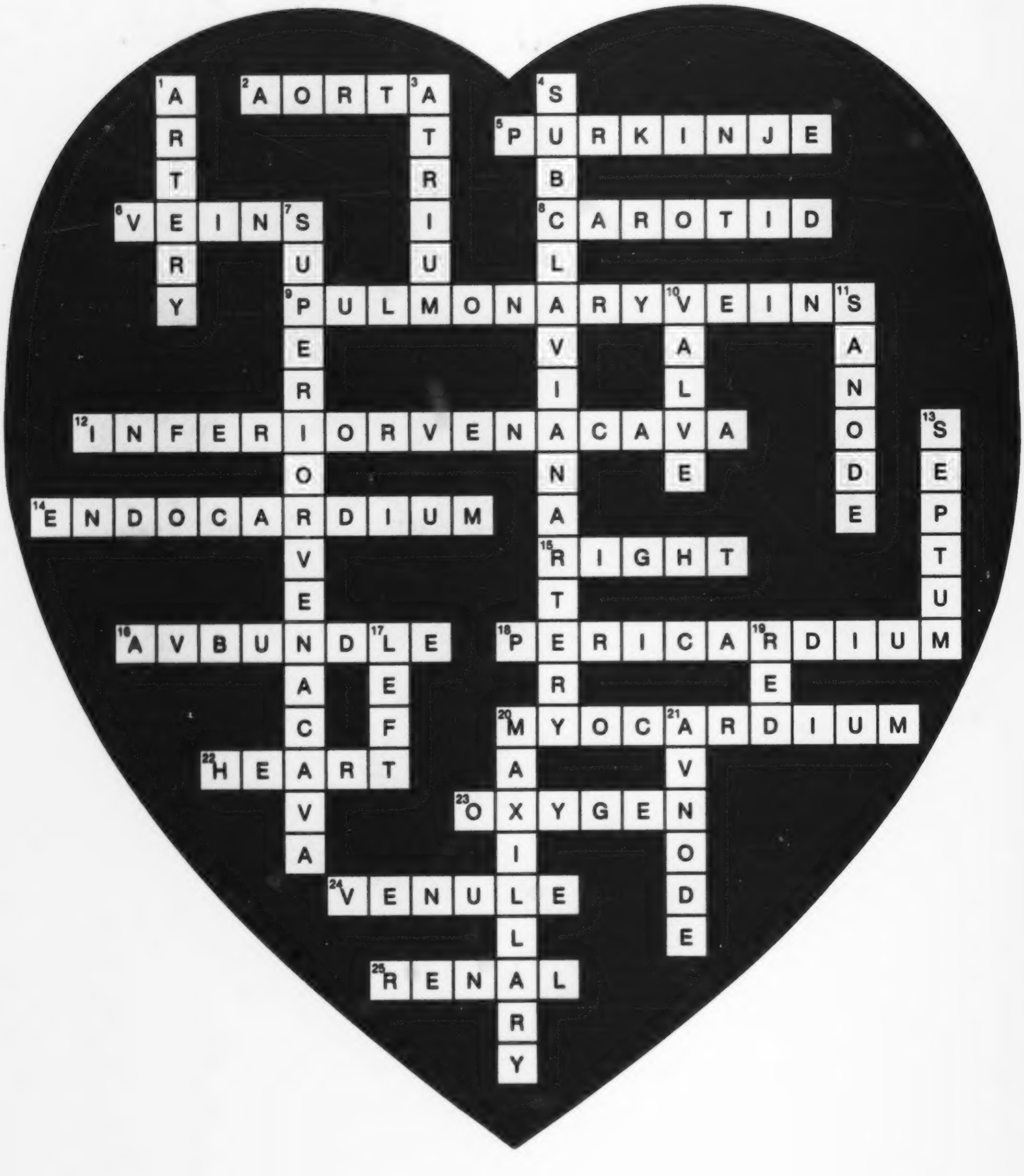
SUPPLEMENT #5

Puzzle #1



SUPPLEMENT #5

Puzzle #2



CIRCULATORY SYSTEM
UNIT VI

SUPPLEMENT #6 — CIRCULATORY SYSTEM WORD SEARCH

In the puzzle below, circle the following terms for major veins and arteries. Terms may appear vertically, horizontally, diagonally, or backwards. A score of 17 is perfect, 15 is super, 12 is good, and 10 is fair.

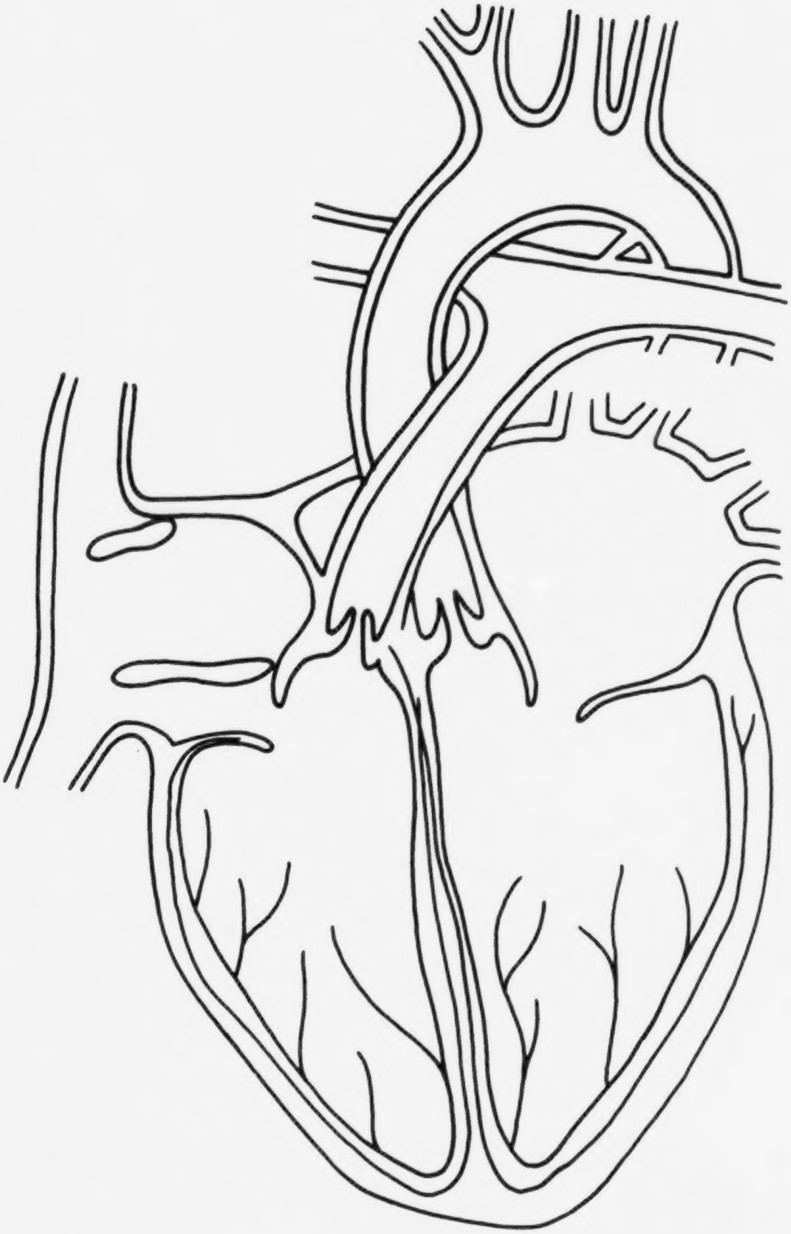
SUPERIOR VENA CAVA
JUGULAR
AORTA
ABDOMINAL AORTA
FEMORAL
OCCIPITAL
CAROTID
TEMPORAL
ARTERY
BRACHIAL
SUBCLAVIAN
RADIAL
DORSALIS
PEDIS
MAXILLARY
INFERIOR VENA CAVA
FACIAL
VEIN

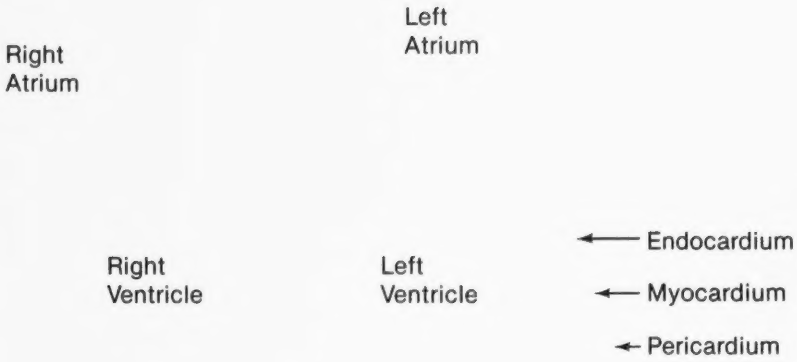
S	P	I	N	F	E	R	I	O	R	V	E	N	A	C	A	V	A	M	E	T
I	U	N	F	E	R	I	O	R	E	N	A	R	V	A	N	A	C	E	V	A
R	E	P	I	T	A	B	D	O	M	I	N	A	L	A	O	R	T	A	E	L
S	U	B	E	O	E	A	N	D	Q	S	F	O	Q	I	L	I	A	M	I	E
F	E	M	O	R	A	L	I	F	V	O	O	R	E	A	U	M	P	X	A	S
C	A	R	O	T	I	T	D	N	J	S	C	T	R	S	L	A	C	I	A	I
A	R	T	E	M	O	O	O	L	U	A	C	A	L	I	N	X	I	A	L	D
S	A	P	H	R	Q	R	R	E	G	P	I	O	D	V	E	I	N	I	E	E
I	F	S	A	P	A	F	S	V	D	E	P	L	N	F	E	L	E	B	U	P
U	L	C	I	L	R	U	A	O	E	E	I	B	E	S	A	L	R	E	B	T
S	U	B	C	A	D	R	L	S	F	N	T	R	J	U	G	A	R	B	O	E
F	Q	U	I	R	S	A	I	H	Q	O	A	A	E	R	A	R	T	E	R	Y
A	D	O	R	O	E	L	S	L	N	U	L	C	S	A	P	Y	X	R	S	L
C	Q	E	C	P	T	U	A	X	I	S	O	H	A	D	X	F	O	T	I	D
I	R	A	D	M	E	G	Q	F	E	R	I	I	P	V	W	A	L	K	R	C
A	Y	I	L	E	O	U	S	U	B	C	L	A	V	I	A	N	P	E	A	N
L	A	N	E	T	X	J	B	C	S	E	F	L	X	R	A	D	I	A	L	P

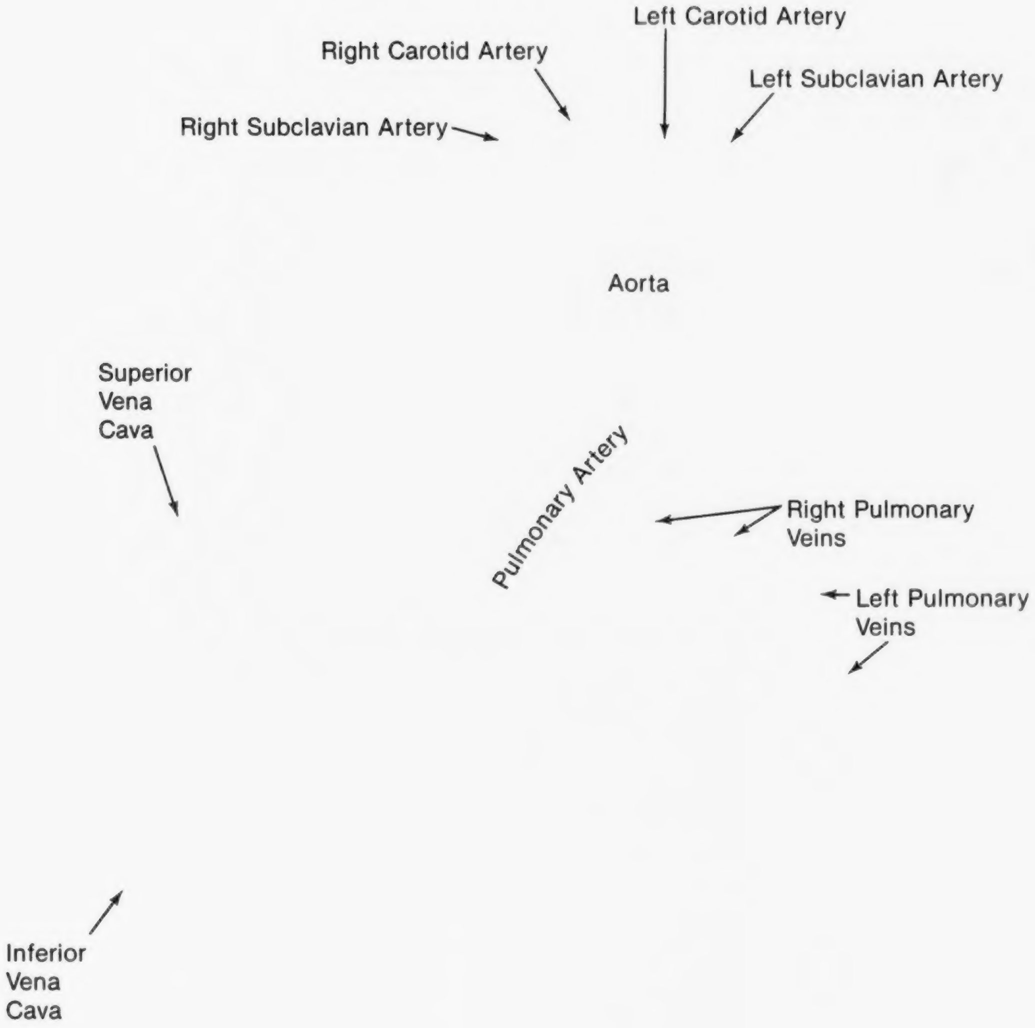
SUPPLEMENT #6

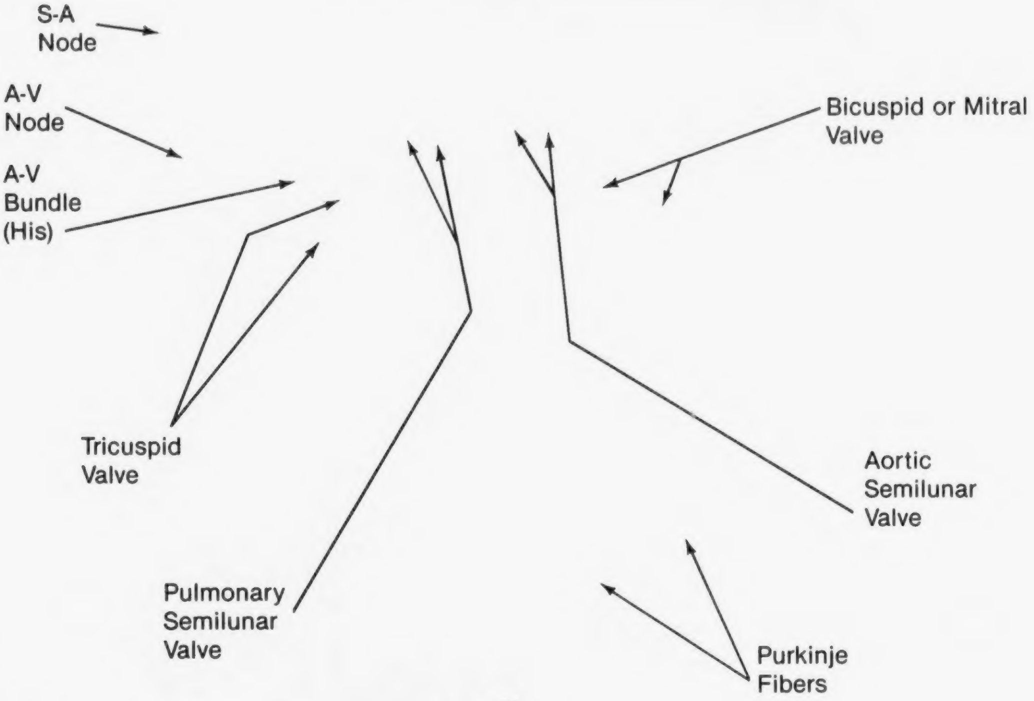
S	P	I	N	F	E	R	I	O	R	V	E	N	A	C	A	V	A	M	E	T
I	U	N	F	E	R	I	O	R	E	N	A	R	V	A	N	A	C	E	V	A
R	E	P	I	T	A	B	D	O	M	I	N	A	L	A	O	R	T	A	E	L
S	U	B	E	O	E	A	N	D	Q	S	F	O	Q	I	L	I	A	M	I	E
F	E	M	O	R	A	L	I	F	V	O	O	R	E	A	U	M	P	X	A	S
C	A	R	O	T	I	T	D	N	J	S	C	T	R	S	L	A	C	I	A	I
A	R	T	E	M	O	O	O	L	U	A	C	A	L	I	N	X	I	A	L	D
S	A	P	H	R	Q	R	R	E	G	P	I	O	D	V	E	I	N	I	E	E
I	F	S	A	P	A	F	S	V	D	E	P	L	N	F	E	L	E	B	U	P
U	L	C	I	L	R	U	A	O	E	E	I	B	E	S	A	L	R	E	B	T
S	U	B	C	A	D	R	L	S	F	N	T	R	J	U	G	A	R	B	O	E
F	Q	U	I	R	S	A	I	H	Q	O	A	A	E	R	A	R	T	E	R	Y
A	D	O	R	O	E	L	S	L	N	U	L	C	S	A	P	Y	X	R	S	L
C	Q	E	C	P	T	U	A	X	I	S	O	H	A	D	X	F	O	T	I	D
I	R	A	D	M	E	G	Q	F	E	R	I	I	P	V	W	A	L	K	R	C
A	Y	I	L	E	O	U	S	U	B	C	L	A	V	I	A	N	P	E	A	N
L	A	N	E	T	X	J	B	C	S	E	F	L	X	R	A	D	I	A	L	P

Structures of the Heart

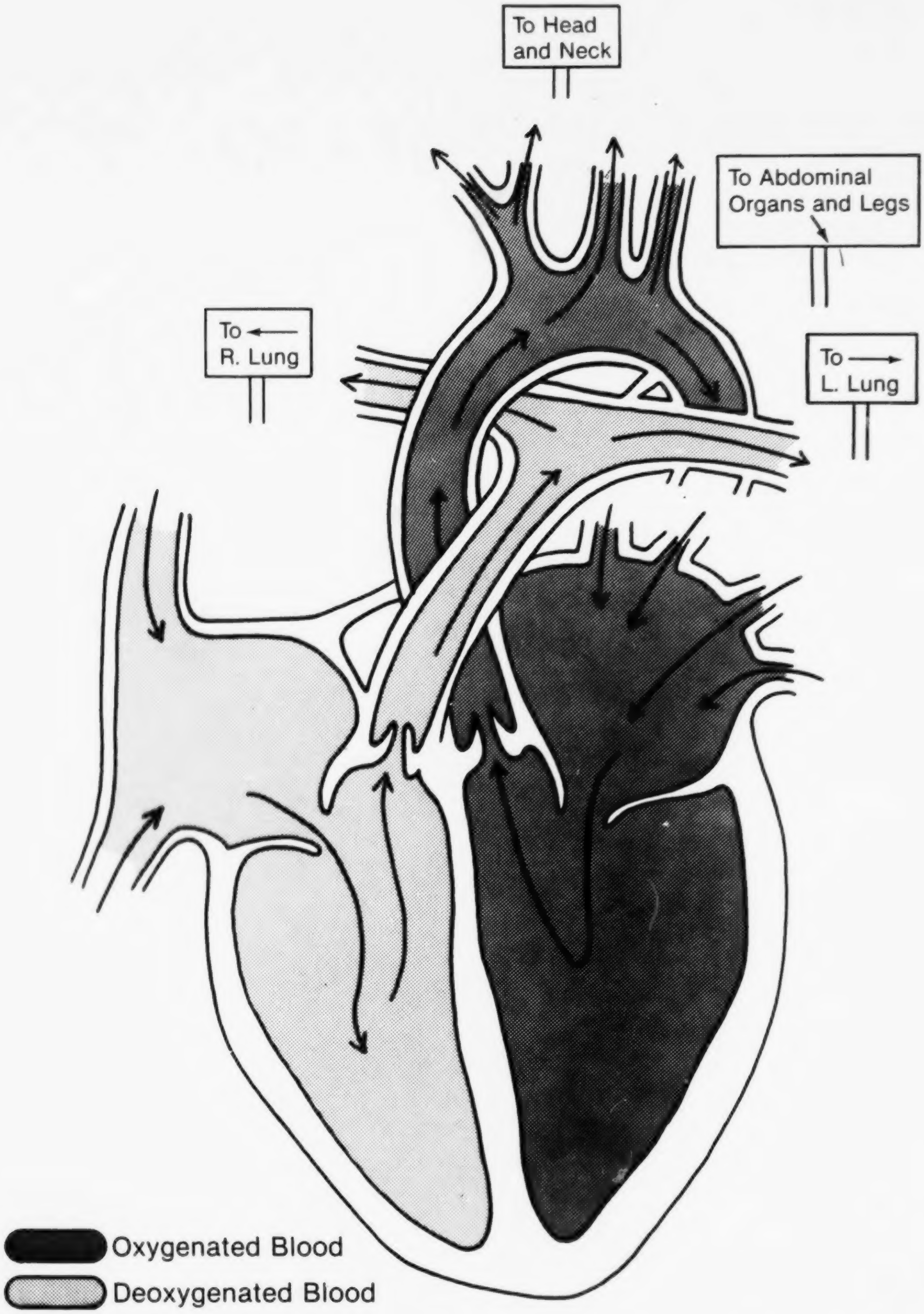



Left Atrium
Right Atrium
Endocardium
Right Ventricle
Left Ventricle
Myocardium
Pericardium


Left Carotid Artery
Right Carotid Artery
Left Subclavian Artery
Right Subclavian Artery
Aorta
Superior Vena Cava
Pulmonary Artery
Right Pulmonary Veins
Left Pulmonary Veins
Inferior Vena Cava

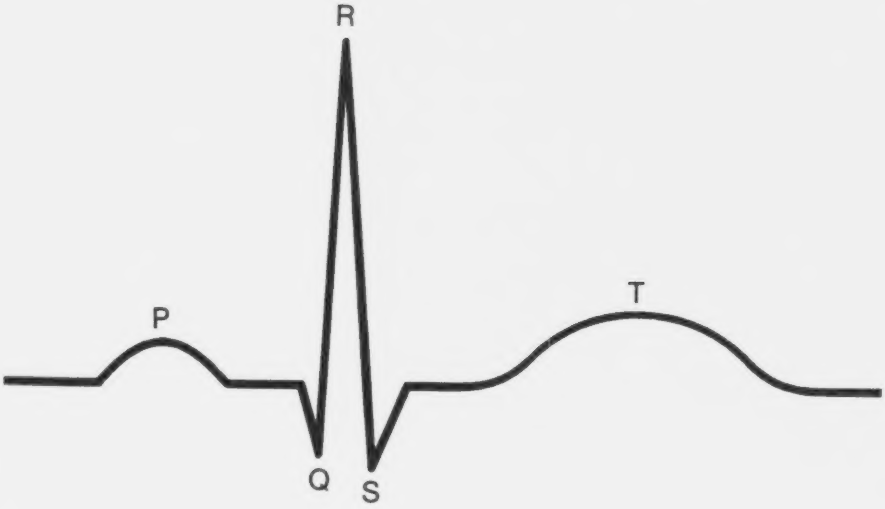

S-A Node
A-V Node
A-V Bundle (His)
Bicuspid or Mitral Valve
Tricuspid Valve
Aortic Semilunar Valve
Pulmonary Semilunar Valve
Purkinje Fibers

Blood Flow


To Head and Neck
To Abdominal Organs and Legs
To ← R. Lung
To → L. Lung
Oxygenated Blood
Deoxygenated Blood

AHC - 447-D

Normal EKG Pattern

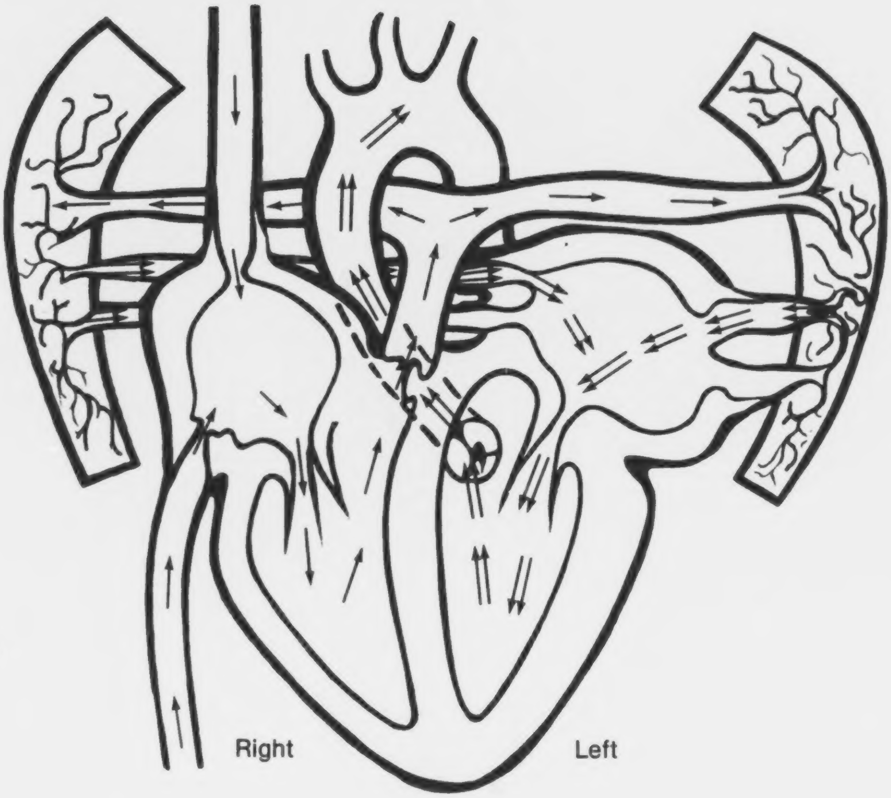


TM #3

CIRCULATORY SYSTEM
UNIT VI

ANSWERS TO ASSIGNMENT SHEET

Assignment Sheet #1



CIRCULATORY SYSTEM
UNIT VI

TEST

NAME ______________________________ SCORE ______________

1. Select correct definitions of terms associated with the blood vessels and systemic circulation. Write an "X" in the blank before the correct definition.

   a. A **venule** is a

      _____ 1) Blood vessel that carries blood from heart

      _____ 2) Minute blood vessel that connects arterioles and venules

      _____ 3) Very small artery

      _____ 4) Very small vein

   b. **Portal circulation** is

      _____ 1) Combined nerve and muscle tissue that regulates order in which heart contractions occur

      _____ 2) Network of very small lymph capillaries that collects excess tissue fluid and certain waste products from body cells

      _____ 3) Movement of blood from stomach, intestine, spleen, and pancreas veins that empty into one vessel, the portal vein, which carries blood loaded with digested food to the liver

      _____ 4) Small bundles of lymphoid tissue; also called *lymph glands*

   c. The **aorta** is the

      _____ 1) Blood vessel that carries blood to the heart

      _____ 2) Main trunk of the arterial system; largest artery

      _____ 3) Minute blood vessel that connects arterioles and venules

      _____ 4) Very small vein

   d. An **arteriole** is a

      _____ 1) Blood vessel that carries blood away from heart

      _____ 2) Blood vessel that carries blood to heart

      _____ 3) Very small artery

      _____ 4) Very small capillary

TEST

e. The **lymphatic system** is a

____ 1) Membranous fold in passageway of heart that prevents return of blood passing through it

____ 2) Network of very small capillaries that collects excess tissue fluid and certain waste products from body cells

____ 3) Small bundle of lymphoid tissue that produces lymphocytes and monocytes that act as filters to keep matter, especially bacteria, from getting into the bloodstream

____ 4) Smooth layer of cells that lines inside of heart and forms valves

f. A **capillary** is the

____ 1) Blood vessel that carries blood to the heart; equipped with one-way valve that permits blood to flow in only one direction

____ 2) Blood vessel with three muscular walls that carries blood from pumping chambers of heart to organs

____ 3) Double membrane that covers heart and secretes fluid that provides lubrication to prevent friction during heart action

____ 4) Minute blood vessel that connects arterioles and venules; made up of endothelial cells that carry materials necessary to cell life into tissues and carry waste products from cells

g. A **vein** is the

____ 1) Blood vessel that carries blood to the heart; equipped with one-way valve that permits blood to flow in only one direction

____ 2) Blood vessel with three muscular walls that carries blood from pumping chambers of heart to organs

____ 3) Lower of two pumping chambers of heart

____ 4) Main trunk of the arterial system; largest artery

h. An **artery** is

____ 1) Blood vessel that carries blood to the heart; equipped with one-way valve that permits blood to flow in only one direction

____ 2) Blood vessel with three muscular walls that carries blood from pumping chambers of heart to organs

____ 3) One of two upper chambers or compartments of heart

____ 4) Very small vein

TEST

1. The **lymph nodes or lymph glands** are

_____ 1) Membranous folds in passageway of heart that prevent return of blood passing through it

_____ 2) Minute blood vessels between arterioles and venules

_____ 3) Small bundles of lymphoid tissue that produce lymphocytes and monocytes that act as filters to keep matter, especially bacteria, from getting into bloodstream

_____ 4) Veins from stomach, intestine, spleen, and pancreas that empty into one vessel

2. Select from the following list functions of the circulatory system. Write an "X" in the blank before each correct answer.

______a. Transporting nutrients and oxygen to body cells

______b. Transporting waste products to body cells

______c. Transporting waste products to excretory organs

______d. Distributing hormones and antibodies

______e. Assisting in control of body fat

______f. Maintaining a stable chemical balance between cell and environment

______g. Transforming carbon dioxide to oxygen

3. Select correct definitions of terms associated with cardiac structure. Write an "X" in the blank before the correct definition.

a. The **septum** is a

_____ 1) Double membrane that covers heart and secretes fluid that provides lubrication to prevent friction during heart action

_____ 2) Membranous fold in passage of heart that prevents return of blood passing through it

_____ 3) Network of very small capillaries that collect excess tissue fluid and certain waste products from the body cells

_____ 4) Wall in middle of heart that divides it into right and left sides

b. The **endocardium** is the

_____ 1) Double membrane that covers heart and secretes fluid that provides lubrication to prevent friction during heart action

_____ 2) Lower pumping chamber of heart

_____ 3) Middle and thickest layer of the heart muscle

_____ 4) Smooth layer of cells that lines inside of heart and forms valves

TEST

c. The **S-A node** is the

____ 1) Combined nerve and muscle tissue that regulate the order in which heart contractions occur

____ 2) Main trunk of arterial system; largest artery

____ 3) Mass of specialized muscle fibers located in the septum at junction of four chambers; responsible for conducting impulses to conduction fibers of heart

____ 4) Small mass of specialized muscle fibers in posterior wall of right atrium just below opening of superior vena cava; usually acts as a pacemaker by establishing rhythm of cardiac contractions

d. The **diastole** is

____ 1) Blood vessel that carries blood from heart

____ 2) Blood vessel that carries blood to heart

____ 3) Period during which heart contracts

____ 4) Period during which heart rests between contractions

e. **Coronary** pertains to the

____ 1) Heart

____ 2) Lower pumping chamber of heart

____ 3) Study of the heart

____ 4) Very small vein

f. **Systole** is

____ 1) Middle and thickest layer of heart muscles

____ 2) Period during which heart contracts

____ 3) Period during which hearts rests between contractions

____ 4) Wall in middle of heart that divides it into right and left sides

g. The **cardiac conduction system** is the

____ 1) Combined nerve and muscle tissue that initiates and distributes cardiac impulses throughout myocardium; composed of A-V node, A-V bundle, S-A node, and Purkinje fibers

____ 2) Group of cardiac muscle fibers that supplies muscular connection between atria and ventricles

____ 3) Network of very small capillaries that collects excess tissue fluid and certain waste products from body cells

____ 4) Small bundles of lymphoid tissue that produce lymphocytes and monocytes that act as filters to keep matter, especially bacteria, from getting into bloodstream

TEST

h. A **ventricle** is the

____ 1) Blood vessel that supplies the heart walls

____ 2) Double membrane that covers heart and secretes fluid that provides lubrication to prevent friction during heart action

____ 3) Lower two pumping chambers of heart

____ 4) Upper chamber or compartment of heart

i. The **A-V node** is the

____ 1) Mass of specialized muscle fibers located in floor of right atrium near interatrial septum; responsible for conducting impulses to conduction fibers of heart

____ 2) Small bundle of lymphoid tissue that produces lymphocytes and monocytes that act as filters to keep matter, especially bacteria, from getting into bloodstream

____ 3) Small mass of specialized muscle fibers in posterior wall of right atrium just below opening of superior vena cava; usually acts as pacemaker by establishing rhythm of cardiac contractions

____ 4) Veins from stomach, intestine, spleen, and pancreas that empty into one vessel

j. The **atrium** is

____ 1) One of two lower chambers of heart

____ 2) One of two upper chambers or compartments of heart

____ 3) The blood vessel that carries blood to heart

____ 4) The middle and thickest layer of heart muscle

k. **Cardiac** means

____ 1) Pertaining to blood vessels that supply heart walls

____ 2) Pertaining to the heart

____ 3) Present at birth

____ 4) Study of blood

l. **Cardiology** is the study of the

____ 1) Circulatory system

____ 2) Heart

____ 3) Lungs

____ 4) Lymph system

TEST

m. The **A-V bundle (bundle of His)** is the

____ 1) Group of cardiac muscle fibers that supplies muscular connection between atria and ventricles; extends downward into septum, divides into right and left branches, and ends in numerous strands (Purkinje fibers) in the papillary and ventricular muscles

____ 2) Mass of specialized muscle fibers located in floor of right atrium near interatrial septum; responsible for conducting impulses to conduction fibers of heart

____ 3) Small bundles of lymphoid tissue that produce lymphocytes and monocytes that act as filters to keep matter, especially bacteria, from getting into the bloodstream

____ 4) Small mass of specialized muscle fibers in posterior wall of right atrium just below opening of superior vena cava; usually acts as a pacemaker by establishing rhythm of cardiac contractions

n. The **myocardium** is the

____ 1) Double membrane that covers heart and secretes fluid that provides lubrication to prevent friction during heart action

____ 2) Middle and thickest layer of heart muscle

____ 3) Minute blood vessels that connect arterioles and venules

____ 4) Smooth layer of cells that lines inside of heart and forms valves

o. The **pericardium** is the

____ 1) Double membrane that covers heart and secretes fluid that provides lubrication to prevent friction during heart action

____ 2) Middle and thickest layer of heart muscle

____ 3) Smooth layer of cells that lines inside of heart and forms valves

____ 4) Wall in middle of heart that divides it into right and left sides

p. A **valve** is the

____ 1) Double membrane that covers heart and secretes fluid that provides lubrication to prevent friction during heart action

____ 2) Lower of two pumping chambers of heart

____ 3) Membranous fold in passage of heart that prevents return of blood passing through it; located at entrance and exit of each ventricle to keep blood from returning and to keep blood flowing in correct direction

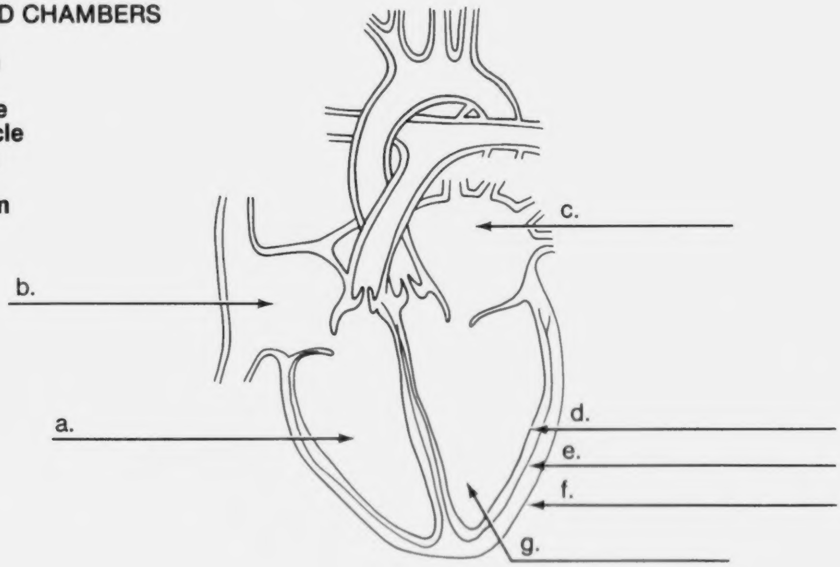
____ 4) Period during which heart rests between contractions

TEST

4. Identify the structures of the heart in the following illustrations. Write the correct names in the blanks.

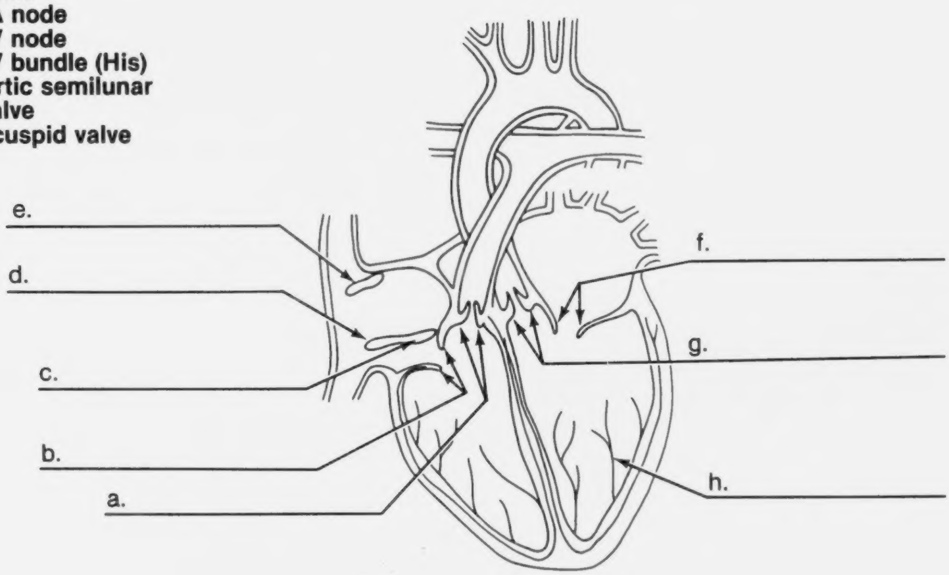
LAYERS AND CHAMBERS

Right atrium
Left atrium
Left ventricle
Right ventricle
Myocardium
Pericardium
Endocardium



VALVES AND CONDUCTING STRUCTURES

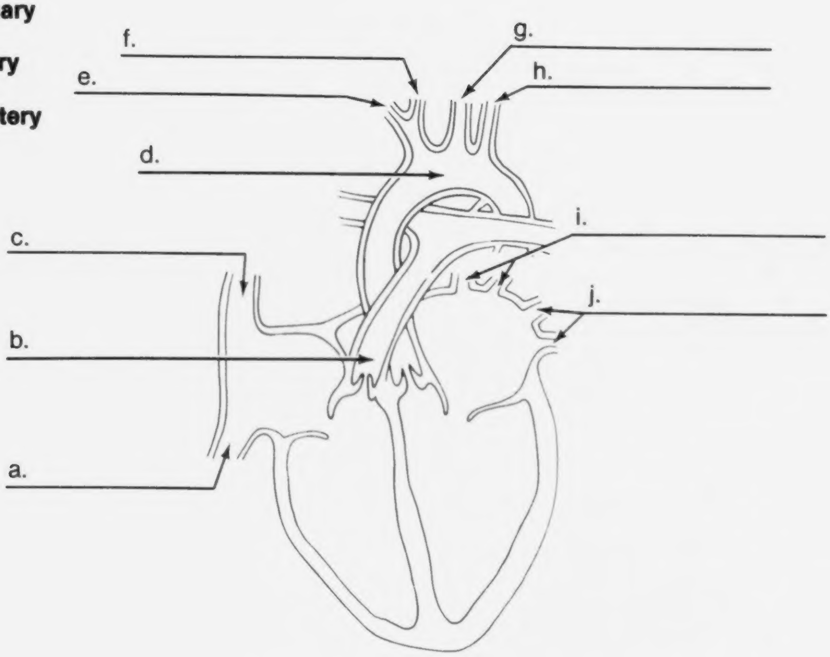
Purkinje fibers
Pulmonary semilunar valve
Bicuspid or mitral valve
S-A node
A-V node
A-V bundle (His)
Aortic semilunar valve
Tricuspid valve



TEST

VESSELS

Inferior vena cava
Superior vena cava
Left subclavian artery
Right subclavian artery
Left carotid artery
Right carotid artery
Right pulmonary veins
Left pulmonary veins
Pulmonary artery
Aorta



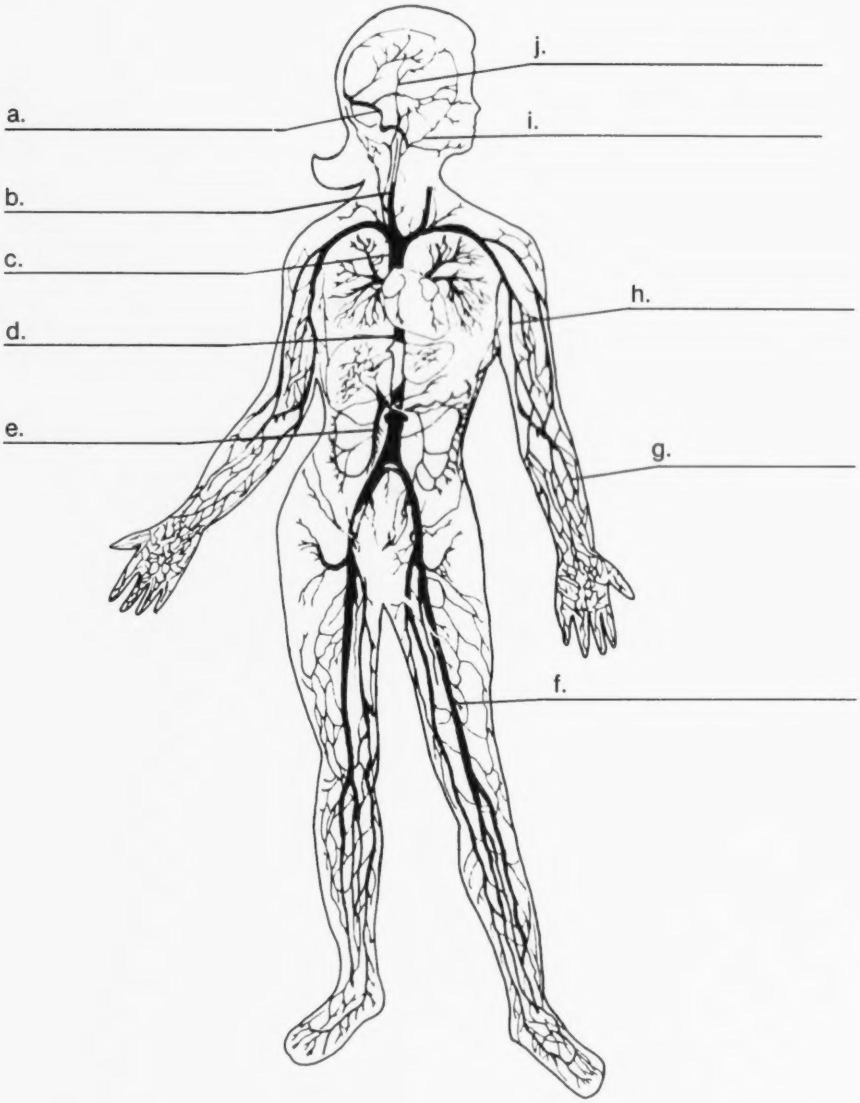
TEST

5. Identify major veins and arteries in the following illustration. Write the correct names in the blanks.

MAJOR VEINS

Brachial
Radial
Femoral
Superior vena cava
Facial

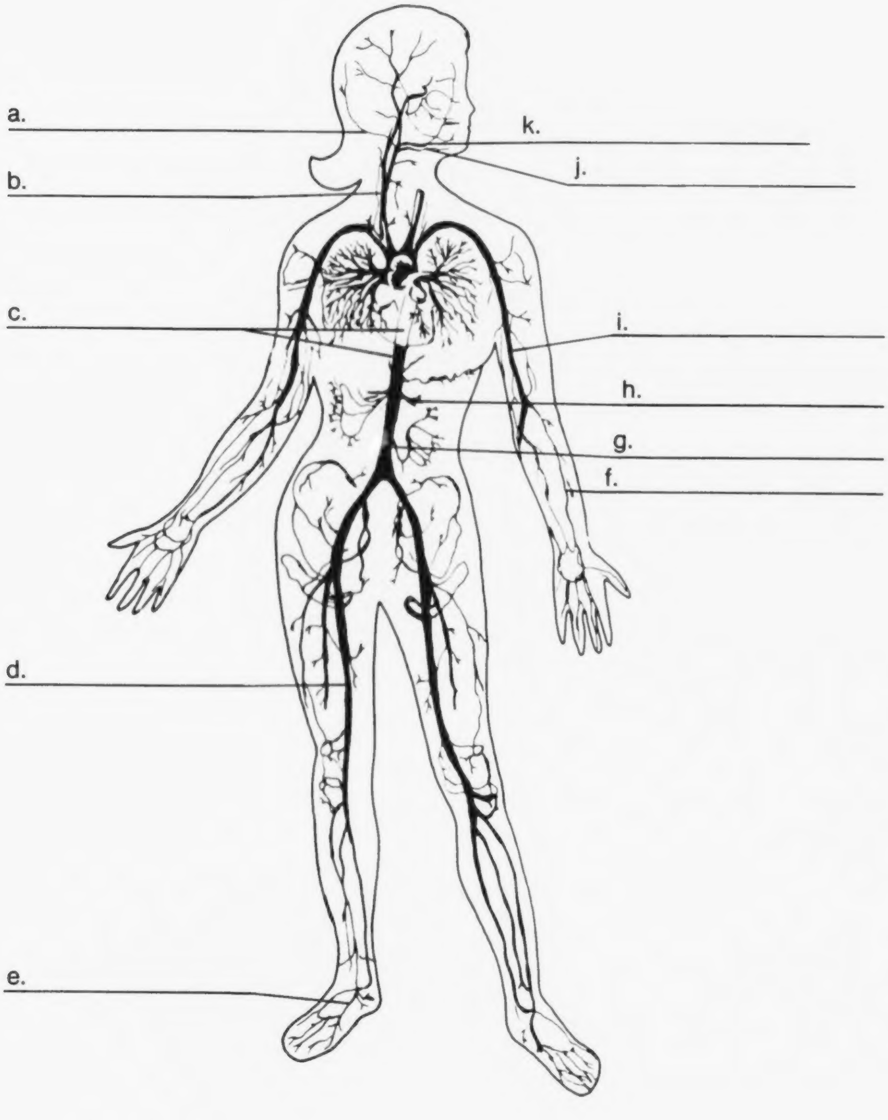
Inferior vena cava
Jugular
Occipital
Temporal
Renal



TEST

MAJOR ARTERIES

Abdominal aorta
Aorta
Brachial
Carotid
Facial
Renal
Dorsalis Pedis
Femoral
Radial
Maxillary
Occipital



TEST

6. Match terms associated with the blood to their correct definitions. Write the correct numbers in the blanks.

______a. Depression of body functions due to failure of circulation

______b. Injection of one person's blood into blood vessels of another person

______c. Blood cells

______d. Deficiency of red blood cells or hemoglobin or both

______e. Antibody fraction of blood

______f. Any of a group of fat or fatlike substances that are insoluble in water

______g. Clotting of blood

______h. White blood cells having a lobed nucleus and granules in the cytoplasm

______i. Insertion of hollow needle into marrow cavity of a flat bone to withdraw a bone marrow sample

______j. Liquid portion of blood

______k. State of chemical balance between a cell and its environment

______l. Study of the blood

______m. Agent that prevents or delays formation of a blood clot

______n. Abnormal discharge of blood, either externally or internally

______o. Oxygen-bearing protein of red blood cells

1. Anemia
2. Anticoagulant
3. Bone marrow puncture
4. Coagulation
5. Corpuscles
6. Gamma globulin
7. Granulocytes
8. Hematology
9. Hemorrhage
10. Hemoglobin
11. Homeostasis
12. Lipid
13. Plasma
14. Shock
15. Transfusion

7. State the general functions of the blood.

a. ____

b. ____

c. ____

TEST

8. List the principal components of blood plasma

a. ______________________ e. ______________________

b. ______________________ f. ______________________

c. ______________________ g. ______________________

d. ______________________ h. ______________________

9. Match blood cells to their correct characteristics. Write the correct numbers in the blanks. Numbers will be used more than once.

______a. Can be seen in clusters

______b. Fight infection

______c. Are colorless

______d. Remain in bloodstream unless a vessel is cut or ruptured

______e. Transport oxygen to cells and carbon dioxide from cells

______f. Vary in shape and size

______g. Are very fragile and break easily under stress

______h. Have average life span of 9 days

______i. Have average life span of 120 days

______j. Are irregular in size and shape

______k. Are minute, disc-shaped cells that look alike or very similar

______l. May move out of blood vessels by passing between cells of vessel walls

1. Erythrocytes
2. Leukocytes
3. Platelets

10. List the different blood groups.

a. ______________________ c. ______________________

b. ______________________ d. ______________________

TEST

11. Answer the following questions about the Rh factor. Write the correct answers in the blanks.

    a. What is the name of the antigen in Rh-positive red blood cells? ______________

    b. What appears in the blood plasma when Rh-positive cells are introduced into an Rh-negative person's body? ______________________________

    c. What stimulates the body of an Rh-negative mother to form anti-Rh antibodies?

    ____

    d. What is the name of the disease that may develop when anti-Rh antibodies are passed in a future pregnancy to an Rh-positive fetus? ______________

    e. What is the name of the serum that can now be given to the mother soon after birth to prevent anti-Rh antibodies from developing? ______________

12. Select from the following list ways to prevent circulatory diseases and disorders. Write an "X" in the blank before each correct answer.

    _____a. Avoid sudden extremes in temperature

    _____b. Maintain proper nutrition to maintain proper weight for age and height

    _____c. Exercise in sudden bursts of strenuous activity to aid circulation

    _____d. Encounter stress whenever possible; learn to enjoy stress

    _____e. Have a regular physical evaluation and seek treatment early for health problems, especially infections

    _____f. Use alcohol and tobacco in moderation as both substances have a damaging effect on the heart and blood vessels

    _____g. Avoid wearing clothing that interferes with circulation

13. Describe education and duties of two health occupations related to the diagnosis and treatment of problems of the circulatory system.

    a. **Occupation** — ______________________________

    ____

    ____

    ____

    ____

TEST

b. **Occupation** — ______________________________

CIRCULATORY SYSTEM
UNIT VI

ANSWERS TO TEST

1. a. 4
   b. 3
   c. 2
   d. 3
   e. 2
   f. 4
   g. 1
   h. 2
   i. 3

2. a, c, d, f

3. a. 4
   b. 4
   c. 4
   d. 4
   e. 1
   f. 2
   g. 1
   h. 3
   i. 1
   j. 2
   k. 2
   l. 2
   m. 1
   n. 2
   o. 1
   p. 3

4. LAYERS AND CHAMBERS

   a. Right ventricle
   b. Right atrium
   c. Left atrium
   d. Endocardium
   e. Myocardium
   f. Pericardium
   g. Left ventricle

   VALVES AND CONDUCTING STRUCTURES

   a. Pulmonary semilunar valve
   b. Tricuspid valve
   c. A-V bundle (His)
   d. A-V node
   e. S-A node
   f. Bicuspid or mitral valve
   g. Aortic semilunar valve
   h. Purkinje fibers

   VESSELS

   a. Inferior vena cava
   b. Pulmonary artery
   c. Superior vena cava
   d. Aorta
   e. Right subclavian artery
   f. Right carotid artery
   g. Left carotid artery
   h. Left subclavian artery
   i. Right pulmonary veins
   j. Left pulmonary veins

ANSWERS TO TEST

5. *Major veins*

   a. Occipital
   b. Jugular
   c. Superior vena cava
   d. Inferior vena cava
   e. Renal
   f. Femoral
   g. Radial
   h. Brachial
   i. Facial
   j. Temporal

   Major arteries

   a. Occipital
   b. Carotid
   c. Aorta
   d. Femoral
   e. Dorsalis pedis
   f. Radial
   g. Abdominal aorta
   h. Renal
   i. Brachial
   j. Facial
   k. Maxillary

6. a. 14
   b. 15
   c. 5
   d. 1
   e. 6
   f. 12
   g. 4
   h. 7
   i. 3
   j. 13
   k. 11
   l. 8
   m. 2
   n. 9
   0. 10

7. a. Transportation of oxygen, nutrients, waste products, and hormones
   b. Maintenance of homeostasis
   c. Resistance to infection

8. a. Water
   b. Blood proteins
   c. Carbohydrates (mainly glucose)
   d. Lipids
   e. Mineral salts
   f. Waste products
   g. Hormones and vitamins
   h. Gases (oxygen, nitrogen, and carbon dioxide)

9. a. 3
   b. 2
   c. 2
   d. 1
   e. 1
   f. 2
   g. 3
   h. 2
   i. 1
   j. 3
   k. 1
   l. 2

ANSWERS TO TEST

10. a. Type O c. Type B
    b. Type A d. Type AB

11. a. Rh-factor
    b. Anti-Rh antibodies
    c. An Rh-positive baby and an Rh-positive father
    d. Erythroblastosis fetalis
    e. Anti-Rh globulin (Rhogam)

12. a, b, e, g

13. Evaluated to the satisfaction of the instructor

DIGESTIVE SYSTEM
UNIT VII

SUGGESTED ACTIVITIES

I. Unit contents

  A. Objective sheet

  B. Suggested activities

  C. Supplements

    1. Supplement #1 — Diseases and Disorders of the Digestive System

    2. Supplement #2 — Diagnostic Tests and Surgical Procedures Used to Treat Gastrointestinal Diseases and Disorders

    3. Supplement #3 — Digestive System Crossword Puzzle

  D. Transparency masters

    1. TM #1 — The Digestive Organs

    2. TM #2 — Structure of a Molar

    3. TM #3 — The Salivary Glands

    4. TM #4 — The Liver, Gallbladder, and Pancreas

    5. TM #5 — Structure of the Villi

    6. TM #6 — Parts of the Large Intestine

    7. TM #7 — Mechanical Digestion

  E. Information sheet

  F. Assignment Sheet #1 — Answer Study Questions About the Digestive System

  G. Answers to assignment sheet

  H. Test

  I. Answers to test

II. Instructor's guide

  A. Review unit and plan presentation.

SUGGESTED ACTIVITIES

B. Order or obtain materials to supplement unit.

1. Films

(NOTE: The following films are available to Oklahoma teachers on a free-loan basis. Oklahoma teachers may order the films from the Film Library, State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364. Out-of-state teachers must order from the addresses listed with the films.)

a. *Teeth*, 12 minutes, 1972. Available from Films, Incorporated, 5547 North Ravenwood Avenue, Chicago, Illinois 60640-1199. This animated film explains the development of teeth from the formation of milk teeth to their replacement by permanent teeth, the inner structure of the teeth, dental treatment, and proper tooth and gum care.

b. *Digestive System*, 12 minutes, 1972. Available from Films, Incorporated, 5547 North Ravenwood Avenue, Chicago, Illinois 60640-1199. The film gives a clear interpretation of the functions of the various parts of the digestive system—mouth, salivary glands, esophagus, stomach, small and large intestines, liver, gall bladder, pancreas, and rectum. Film emphasizes basic nutrients essential in a balanced diet.

c. *I Am Joe's Stomach*, 26 minutes, 1975. Available from Pyramid Films, P.O. Box 1048, Santa Monica, California 90406. This film uses models, diagrams, animation, and live-action situations to describe the functions of the gastrointestinal tract.

2. Computer program — *The Body in Focus*. Available for Apple II, Commodore, and IBM from Teachware, P.O. Box 94365, Oklahoma City, Oklahoma 73143, phone 405-794-3748.

(NOTE: This software includes a keyboard overlay for easy use and uses animated graphics to help the student discover how the human body works. It includes the digestive system as one of those covered in the program.)

3. Models

a. Liver Anamod, available from Damon/Instructional Systems Division, 80 Wilson Way, Westwood, Massachusetts 02090-1898.

(NOTE: Anamods are three-dimensional, snap-together, vinyl models of body organs. Each comes with descriptive text and illustrations. Easy-to-follow tables provide the student with information on individual organ structures, locations, pronunciations, descriptions, and functions—all numerically keyed to the substructures of the Anamod model.)

SUGGESTED ACTIVITIES

b. "Mr. Gross Mouth," available from Health Education Company, P.O. Box 21207, 5045 Franklin Avenue, Waco, Texas 76702 (telephone 1-800-433-2677).

(NOTE: "Mr. Gross Mouth" illustrates gingivitis, carcinomas, dental caries, and gingival recessions.)

4. 16 mm film projector, overhead projector, and appropriate computer for utilization of the materials listed above

5. Transparencies and competency profiles

(NOTE: Transparencies and competency profiles for this manual are available from the State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

6. Illustrations, wall charts, or other models of digestive system organs

C. Provide students with unit.

D. Introduce unit by discussing the unit and specific objectives. Point out that completion of the specific objectives leads to attainment of the unit objective.

E. Discuss information sheet.

1. Use Section I of the Information Sheet to introduce students to basic terminology associated with the digestive system.

2. Use Information Sheet, Section II, to explain the functions of the digestive system and their importance.

3. Use Information Sheet, Sections III and IV, to discuss the organs and functions of the organs of the alimentary canal.

   - Illustrate your discussion with Transparencies #1 through #6.
   - Show film *Digestive System*, and discuss it with the class.
   - Show Transparency #7 for reference, and allow students to use *The Body in Focus* software as a review.
   - Use liver Anamod for demonstration purposes.

4. Use Information Sheet, Sections V through VII, to discuss the mouth, teeth, and salivary glands.

   - Use Transparencies #2 and #3 to illustrate your discussion.

SUGGESTED ACTIVITIES

- Show film *Teeth*, and discuss it with the class.
- Invite a member of the dental profession to speak to the class about good dental hygiene.

5. Use Information Sheet, Sections VIII and IX, to discuss the stomach and its functions.

    - Show film *I Am Joe's Stomach*, and discuss it with the class.

6. Use Information Sheet, Sections X and XI, to explain the characteristics of the divisions of the small and large intestines.

    - Illustrate your discussion with Transparencies #4 through #6.

7. Use Information Sheet, Section XII, to discuss ways of maintaining a healthy digestive system.

    - Ask students to evaluate their own digestive system maintenance by using this section of the information sheet as a checklist.
    - Invite a dietitian to the class to talk to the class about diet and good eating habits.
    - Have students participate in a stress-management workshop.
    - Demonstrate the proper way to lift an object to avoid strain.

8. Use Information Sheet, Section XIII, to explore occupations concerned with the health of the digestive system.

    - Invite individuals engaged in any of these health occupations to speak to the class about career opportunities.
    - Take students on a tour of a hospital laboratory so that they may observe lab personnel performing their duties.
    - Provide students with Supplements #1 and #2 and discuss them with the class.
    - Have students complete Assignment Sheet #1 and the crossword puzzle in Supplement #3 as a review of the material covered in this unit.

SUGGESTED ACTIVITIES

F. Give unit test.

G. Critique test and discuss with the class.

H. Reteach and retest if necessary.

I. Complete appropriate section of students' competency profiles.

III. Unit references

A. Boyles, Marcia V., Margaret K. Morgan, and Mary H. McCaulley. *The Health Professions*. Philadelphia: W.B. Saunders Company, 1982.

B. *Gastroenterology*, 2nd ed. Elmsford, New York: National Publishers of the Black Hills, Inc., 1984.

C. Kellum, Mary. *Anatomy and Physiology*. Stillwater, Oklahoma: Mid-America Vocational Curriculum Consortium, Inc., 1984.

D. LaFleur, Myrna Weber, and Winifred K. Starr. *Exploring Medical Language*. St. Louis: The C. V. Mosby Company, 1985.

E. Rogers, Helen V. and Ann Benson. *Practical Nursing: Volume I*, rev. by Jamee Reid Sloan. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1981.

F. Sloan, Jamee Reid. *Health Service Careers*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1979.

DIGESTIVE SYSTEM
UNIT VII

SUPPLEMENT #1 — DISEASES AND DISORDERS OF THE DIGESTIVE SYSTEM

Disease or disorder	Description, Cause, or Frequency
Functional and degenerative disorders	
Achalasia	Progressive failure of the swallowing mechanism in the lower two-thirds of the esophagus
Cirrhosis of the liver	Degeneration and scarring of liver cells; a chronic disease that may be caused by alcohol abuse, some forms of hepatitis, toxic chemical, and sometimes heart failure
Esophageal varices	Varicose or swollen distended veins in the esophagus
Hemorrhoids	Dilated veins that occur in the anus and anal canal
Hiatal hernia	Abnormal opening in a muscle wall through which a section of soft tissue bulges; occurs where the esophagus passes through the diaphragm, just before the gastroesophageal sphincter
Ileus	Paralysis of the intestinal tract
Intestinal obstruction	Blockage of any part of the intestines, either partially or completely
Irritable bowel syndrome	Abnormality in the function of the colon, causing diarrhea, constipation, or alternating diarrhea and constipation, and abdominal pain
Pyloric stenosis	Obstruction of the pyloric orifice of the stomach
Infections and inflammation	
Appendicitis	Inflammation of the appendix
Dental caries	Tooth decay
Dysentery	Ingestion of shigella bacteria through contaminated water supplies, which causes severe gastroenteritis, cramps, fever, and diarrhea
Esophagitis	Inflammation of the esophagus
Gastritis	Irritation of the stomach lining; may be caused by overeating, smoking, heavy drinking, viral infection, or heavy aspirin use

SUPPLEMENT #1

Disease or disorder	Description, Cause, or Frequency
Gastroenteritis	Irritation or inflammation of the gastrointestinal tract; may be caused by viral infection, food poisoning, or allergic reactions to food
Inflammatory bowel disease	
Acute viral hepatitis	Viral infection of the liver
Cholecystitis	Inflammation of the gallbladder; most commonly caused by blockage of the cystic duct or common duct due to gallstones
Chronic active hepatitis	Chronic inflammation of the liver, causing death of the liver cells
Crohn's disease	Inflammation of one or more regions of the intestines, most commonly the ileum; may be chronic
Diverticulitis	Inflammation or infection of small sacs or pouches (diverticula) that occur as projections from the outside walls of the colon
Duodenal ulcer disease	Ulcer in the wall of the duodenum, the section of small intestine closest to the stomach; generally smaller than gastric ulcers, but heal less readily
Gastric ulcer	Raw area in the mucosa of the stomach; exact cause not known
Pancreatitis	Inflammation of the pancreas; may be acute or chronic and recurrent
Ulcerative colitis	Lining of the colon becomes inflamed and develops ulcers and abscesses for no known reason
Zollinger-Ellison syndrome	Ulcerogenic tumor of the pancreas
Periodontitis	Inflammation of the gums; must commonly caused by poor oral hygiene, but may also be a byproduct of diseases such as diabetes or as a side effect of pregnancy, oral contraceptives, or some anticonvulsant drugs
Peritonitis	Inflammation of the peritoneum that occurs as a complication of severe irritation, infection, or rupture of organs in the cavity
Salivary gland infections	Most common cause is mumps, a viral infection that affects the parotid glands

SUPPLEMENT #1

Disease or disorder	Description, Cause, or Frequency
Salmonellosis	Ingestion of salmonella bacteria, which causes gastroenteritis with cramps and fever
Trench mouth (Vincent's Angina)	Bacterial infection of the gums
Neoplastic diseases	
Benign tumors of the stomach	Benign growths in the stomach, including polyps, smooth muscle tumors, adenomas, and hamartomas; may occur singly or in groups
Cancer of the colon and rectum	One of the most common forms of cancer in the United States
Cancer of the liver	Malignant growth or growths in the liver; often a secondary cancer that has metastisized from a primary cancer
Cancer of the stomach	Malignant growths in the stomach; may occur by themselves or be preceded by polyps, gastric ulcer, or pernicious anemia
Carcinoid syndrome	Disease that usually begins with a growth in the intestinal tract that spreads without initial symptoms and eventually causes fibrosis, or development of fibrous tissue
Esophageal tumors	Growths in the esophagus that may be benign or malignant; very rare
Pancreatic cancer	Cancer of the pancreas is one of the most frequent causes of cancer deaths in the United States after lung, colon, and breast cancer
Polyps of the colon	Growths, usually benign, in the mucosal lining of the colon
Tumors of the mouth or tongue	Growths on the tongue or in the mouth that may be benign or malignant
Tumors of the small intestine	Growths, usually benign, in the small intestine
Nutritional and metabolic diseases/disorders	
Celiac disease	Abnormality in the small intestine that prevents proper digestion of gluten, a protein found in wheat, barley, rye, and oats

SUPPLEMENT #1

Disease or disorder	Description, Cause, or Frequency
Lactose intolerance	Inability of individual to digest lactose found in cow's milk due to a deficiency of the digestive enzyme lactase; may be inherited or acquired deficiency
Malabsorption	Inadequate absorption of nutrients by small intestine
Obesity	Twenty percent or more excess weight over ideal weight
Vitamin deficiency	Inadequate intake of specific vitamins

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DIGESTIVE SYSTEM
UNIT VII

SUPPLEMENT #2 — DIAGNOSTIC TESTS AND SURGICAL PROCEDURES USED TO TREAT GASTROINTESTINAL DISEASES AND DISORDERS

Test/Procedure	Description
DIAGNOSTIC TESTS	
X ray	
Angiogram or arteriogram	Contrast material is injected into an artery and the progress of that material through the blood vessels can be followed with a series of x rays; used in gastroenterology to locate sites of severe internal bleeding and for finding tumors that develop with blood vessels in them.
Barium enema (lower GI series)	Barium is inserted into the system through the rectum so that the interior of the rectum, colon, and lower part of the small intestine will show on x-ray film; reveals the same types of abnormalities as those revealed in upper GI series
Barium meal or barium swallow (upper GI series)	Patient swallows barium, which functions as a contrast medium, so that the interior of the digestive system will show on x-ray film. Used to evaluate the upper GI tract, including the esophagus, stomach, and upper part of small intestine; reveals such abnormalities as narrowing of the tract, abnormal growths or deformities, and abnormal peristalsis.
Endoscopy	A thin tube equipped with a light source, lenses, cameras, cutting tools, and grasping tools is used to examine body cavities; photograph the esophageal lining, stomach walls, and villi in the intestines, and remove foreign objects, growths, or tissues. The following endoscopes are used in gastroenterology: **Proctoscope** — Used to examine the rectum **Sigmoidoscope** — Used to examine the sigmoid colon **Colonoscope** — Used to examine the large intestine **Gastroscope** — Used to examine the stomach and duodenum **Esophagoscope** — Used to examine the esophagus

SUPPLEMENT #2

Test/Procedure	Description
Laboratory tests	
Blood tests	Levels of certain hormones, enzymes, and other chemicals are measured to check liver and pancreatic function.
Feces and vomit tests	Feces or vomit is analyzed to check for blood and other elements that may indicate disease.
Gastric analysis	A nasogastric tube is used to draw out stomach contents, which can then be analyzed to determine stomach function.
SURGICAL PROCEDURES	
Appendectomy	Removal of the appendix
Colostomy	Removal of part of the colon and rerouting of the intestine to a stoma, or opening, in the abdominal wall rather than the rectum; the patient uses a specially designed bag to catch digestive wastes.
Gastrectomy	Removal of all or part of the stomach
Ileostomy	Similar to a colostomy, except that the ileum, not the colon, forms the stoma.
Intestinal resection	A portion of the intestine is removed, and the gap is repaired by suturing the ends back together.
Laparoscopy or laparotomy	Insertion of a rigid endoscope through a small incision in the abdomen to evaluate abdominal problems; is exploratory surgery of the abdomen.

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DIGESTIVE SYSTEM
UNIT VII

SUPPLEMENT #3 — DIGESTIVE SYSTEM CROSSWORD PUZZLE

Review your knowledge of vocabulary associated with the digestive system. Use the clues below and your information sheet to complete the puzzle on the next page.

ACROSS

3. Rhythmical waves of contraction that move food along the gastrointestinal tract
11. Registered Dietitian (abbr)
12. Accessory organs that permit speech and taste, forces food between teeth, and moves food through mouth
13. 51 Roman
14. Small lump or mass of chewed food
15. Medical examiner (abbr)
16. Shortest and broadest part of small intestine
17. Part of large intestine divided into four portions
19. The terminal 1-1 ½ inches of large intestine is the anal ____________
20. Is vermiform in shape
23. Not good
24. Hush!
25. Season for raking leaves
27. Tin (abbr)
28. Is seated
29. Whitetailed ____________
32. Single
33. Salivary gland located in posterior part of floor of mouth
36. Folds of mucous membrane on internal surface of stomach
37. Sign of infection
40. American Press Association (abbr)
43. Rodent
44. Branch of medical science dealing with physiology and pathology of digestive system
46. Sick
47. Mohammed ____________
48. Nearly liquid mixture of partly digested food and digestive secretions found in stomach and small intestine
50. Ton (abbr)
51. Accessory organ that produces bile
52. Prefix meaning *new*
53. Medical assistant (abbr)
54. Accessory structure that begins the breakdown of food (plural)
56. Operating room (abbr)
58. Pertaining to or caused by food
59. Enzyme secreted by parotid glands
60. Opposite of *in*
61. Health professional responsible for oral health
65. Period
66. Repair
67. Opposite of *out*
68. Consume food
69. Iron (abbr)
70. Class of tooth adapted for biting food
72. Alcoholic beverage
74. Small island
75. Complex protein capable of inducing a chemical change in another substance
76. Thick yellow or greenish fluid secreted by the liver
78. Last 7 or 8 inches of gastrointestinal tract
81. Accessory organ that produces insulin
82. Ringlike muscles

DOWN

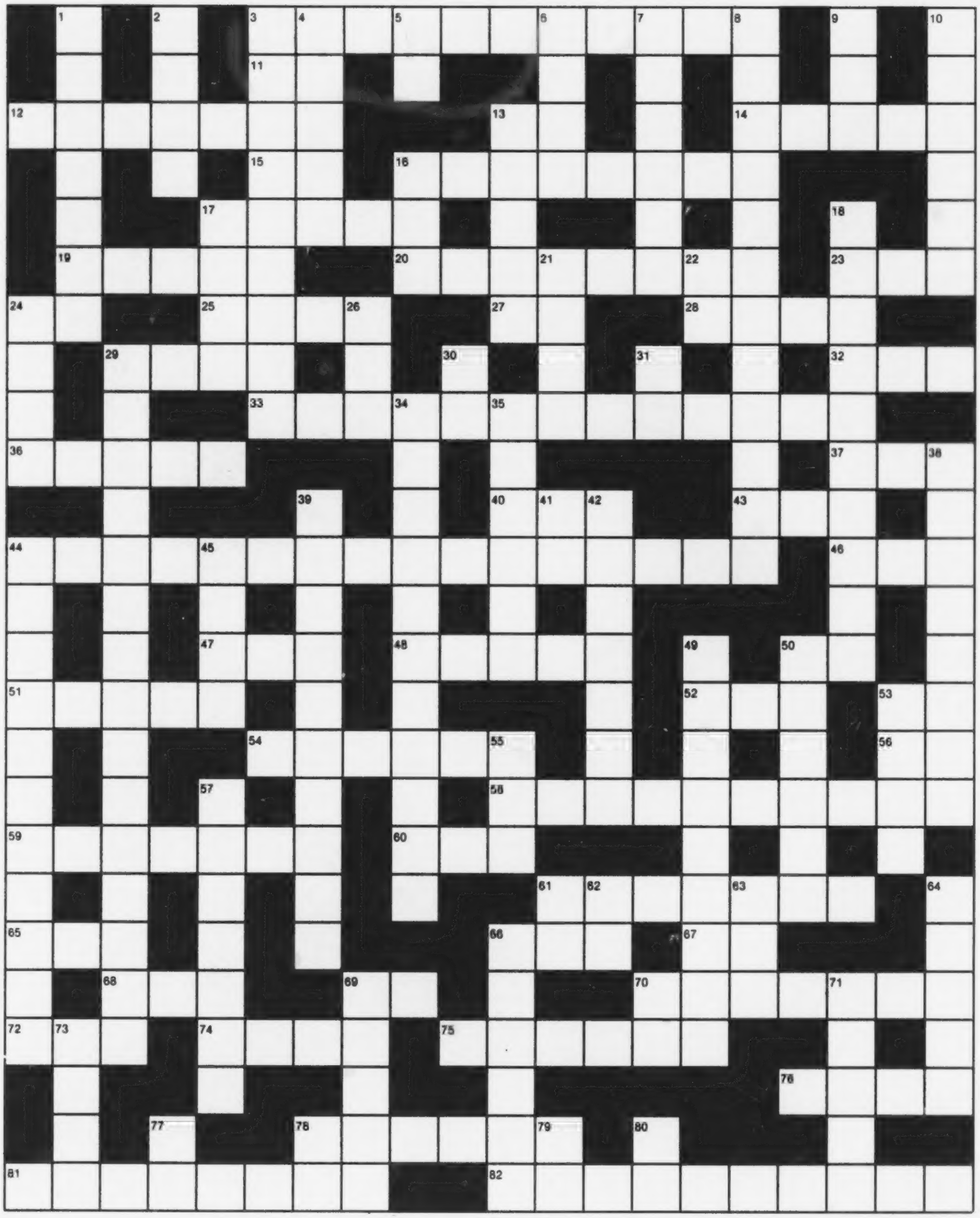
1. Temporary receptacle for food while it undergoes certain mechanical and chemical processes that change food to chyme
2. Very large
3. Bicuspids
4. Automobile no longer manufactured
5. 2 Roman
6. Nature of stomach juices

SUPPLEMENT #3

7. Autographed
8. Submandibular
9. Prefix meaning *abnormal*
10. Class of tooth adapted for biting and tearing of food
13. Figures formed by curving and bending of the intestine
16. Deoxyribonucleic acid (abbr)
17. Coffee shop
18. The passing of nutrients into the blood and lymph
21. Oklahoma town
22. Exists
24. Not sweet
26. Laboratory (abbr)
29. Primary and accessory organs that make digestion possible (2 wds)
30. Master of Arts degree (abbr)
31. Pound (abbr)
34. Process of chewing
35. Almost
38. Type of gland essential for digestion
39. Serous membrane over the viscera and lining the abdominal cavity
41. Post office (abbr)
42. Tooth sockets
44. Accessory organ that stores and concentrates bile
45. Posterior
49. Small or large, for example
50. Possessive of *tooth*
53. Additional
55. Abbreviation for day of week
57. Largest salivary glands
61. Prefix meaning *two* or *double*
62. Prefix meaning *without*
63. Incorporated (abbr)
64. Intestine that reabsorbs water and discharges digestive wastes
66. Section of stomach farthest from pylorus
69. Food wastes discharged from intestines
70. Contraction for *I am*
71. Sign of happiness
73. Crystalline solid found in urine
77. Alternating current (abbr)
78. Radium (abbr)
79. Melting point (abbr)
80. Gastrointestinal (abbr)

AHC - 501-D

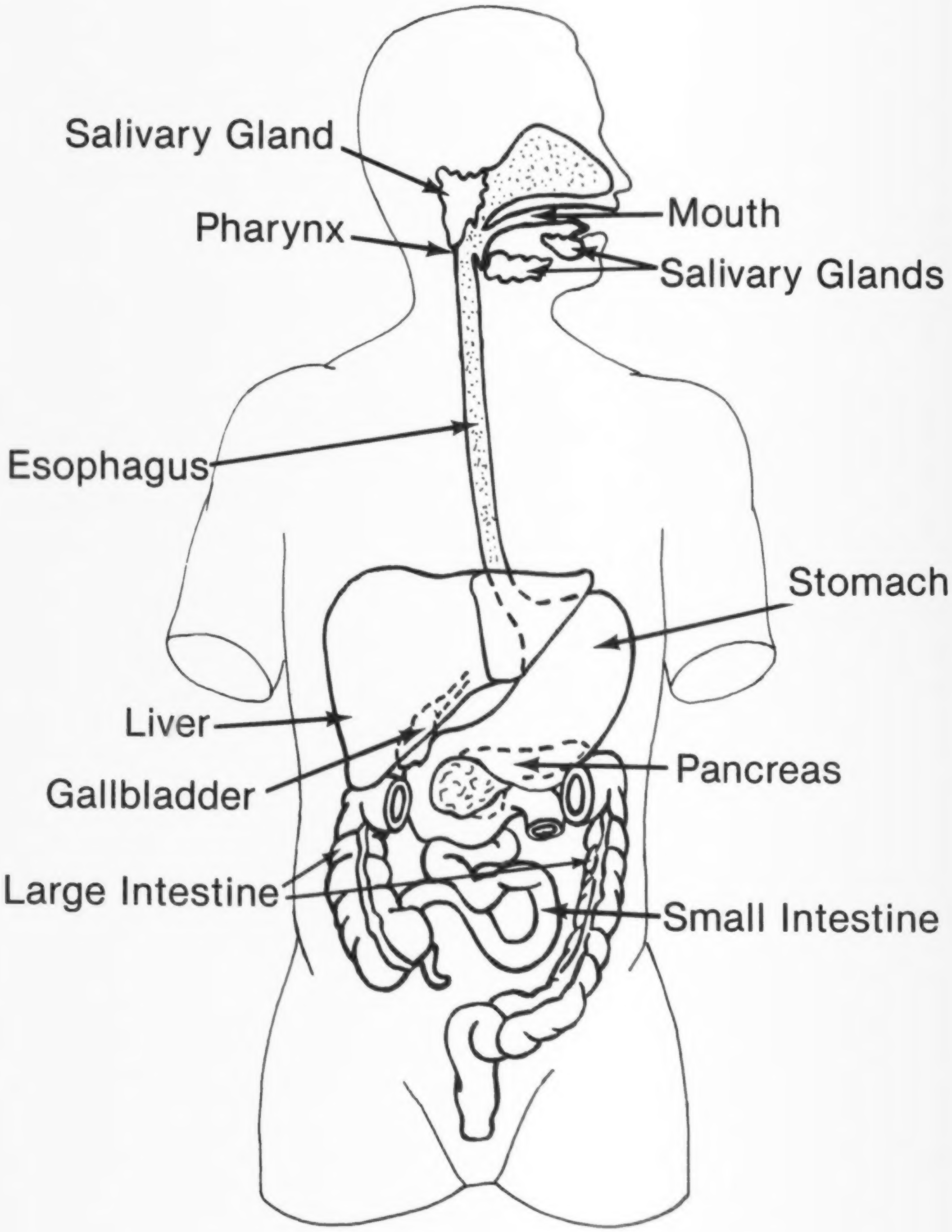
SUPPLEMENT #3



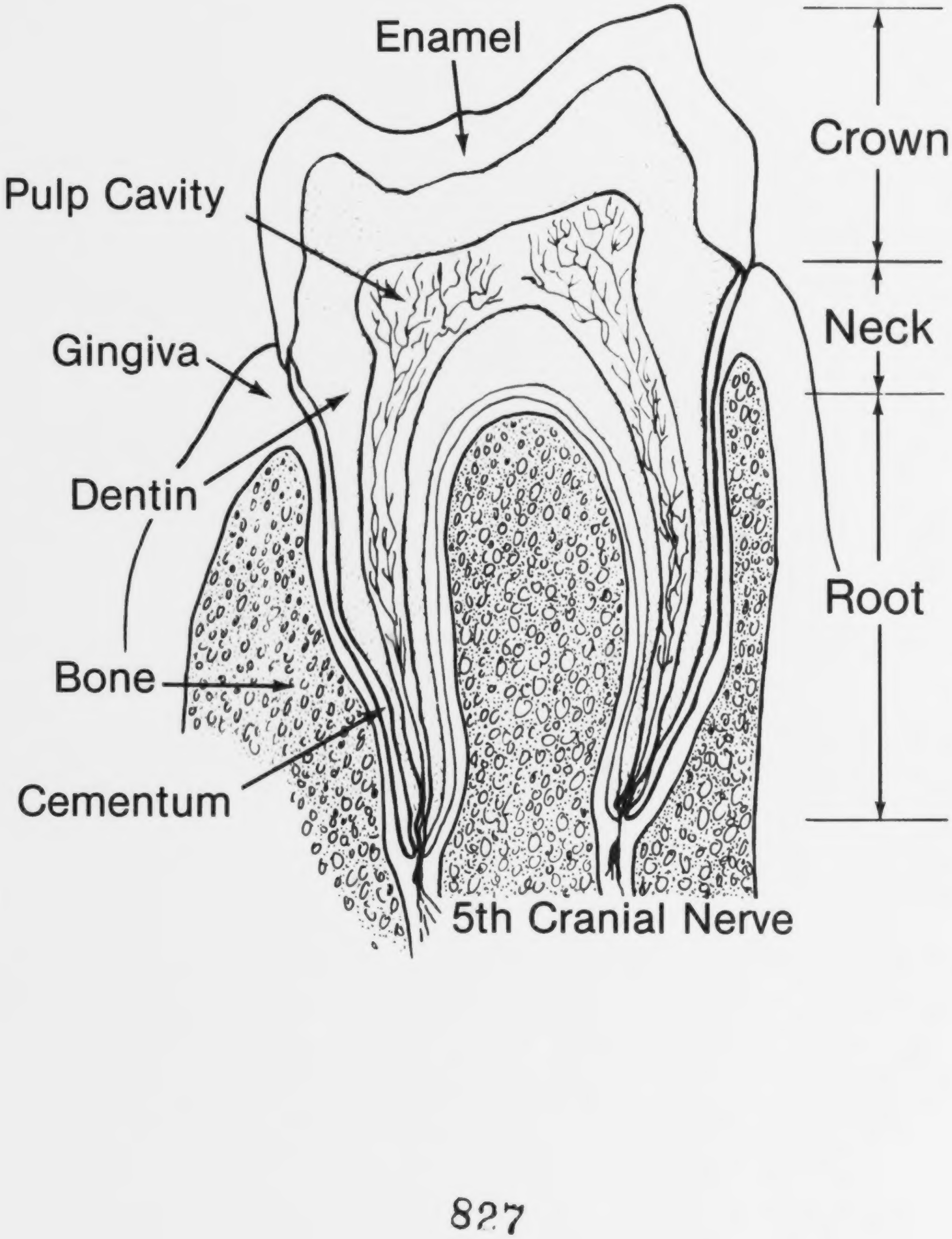
SUPPLEMENT #3

■	1 S	■	2 H	■	3 P	4 E	R	5 I	S	T	6 A	L	7 S	I	8 S	■	9 M	■	10 C
■	T	■	U	■	11 R	D	■	I	■	■	C	■	I	■	U	■	A	■	U
12 T	O	N	G	U	E	S	■	■	■	13 L	I	■	G	■	14 B	O	L	U	S
■	M	■	E	■	15 M	E	■	16 D	U	O	D	E	N	U	M	■	■	■	P
■	A	■	■	17 C	O	L	O	N	■	O	■	■	E	■	A	■	18 A	■	I
■	19 C	A	N	A	L	■	■	20 A	P	P	21 E	N	D	22 I	X	■	23 B	A	D
24 S	H	■	■	25 F	A	L	26 L	■	■	27 S	N	■	■	28 S	I	T	S	■	■
O	■	29 D	E	E	R	■	A	■	30 M	■	I	■	31 L	■	L	■	32 O	N	E
U	■	I	■	■	33 S	U	B	34 M	A	35 N	D	I	B	U	L	A	R	■	■
36 R	U	G	A	E	■	■	■	A	■	E	■	■	■	■	A	■	37 P	U	38 S
■	■	E	■	■	■	39 P	■	S	■	40 A	41 P	42 A	■	■	43 R	A	T	■	A
44 G	A	S	T	45 R	O	E	N	T	E	R	O	L	O	G	Y	■	46 I	L	L
A	■	T	■	E	■	R	■	I	■	L	■	V	■	■	■	■	O	■	I
L	■	I	■	47 A	L	I	■	48 C	H	Y	M	E	■	49 I	■	50 T	N	■	V
51 L	I	V	E	R	■	T	■	A	■	■	■	O	■	52 N	E	O	■	53 M	A
B	■	E	■	■	54 M	O	U	T	H	55 S	■	L	■	T	■	O	■	56 O	R
L	■	S	■	57 P	■	N	■	I	■	58 A	L	I	M	E	N	T	A	R	Y
59 A	M	Y	L	A	S	E	■	60 O	U	T	■	■	■	S	■	H	■	E	■
D	■	S	■	R	■	U	■	N	■	■	61 D	62 E	N	T	63 I	S	T	■	64 L
65 D	O	T	■	O	■	M	■	■	■	66 F	I	X	■	67 I	N	■	■	■	A
E	■	68 E	A	T	■	■	69 F	E	■	U	■	■	70 I	N	C	I	71 S	O	R
72 R	73 U	M	■	74 I	S	L	E	■	75 E	N	Z	Y	M	E	■	■	M	■	G
■	R	■	■	D	■	■	C	■	■	D	■	■	■	■	■	76 B	I	L	E
■	E	■	77 A	■	■	78 R	E	C	T	U	79 M	■	80 G	■	■	■	L	■	■
81 P	A	N	C	R	E	A	S	■	■	82 S	P	H	I	N	C	T	E	R	S

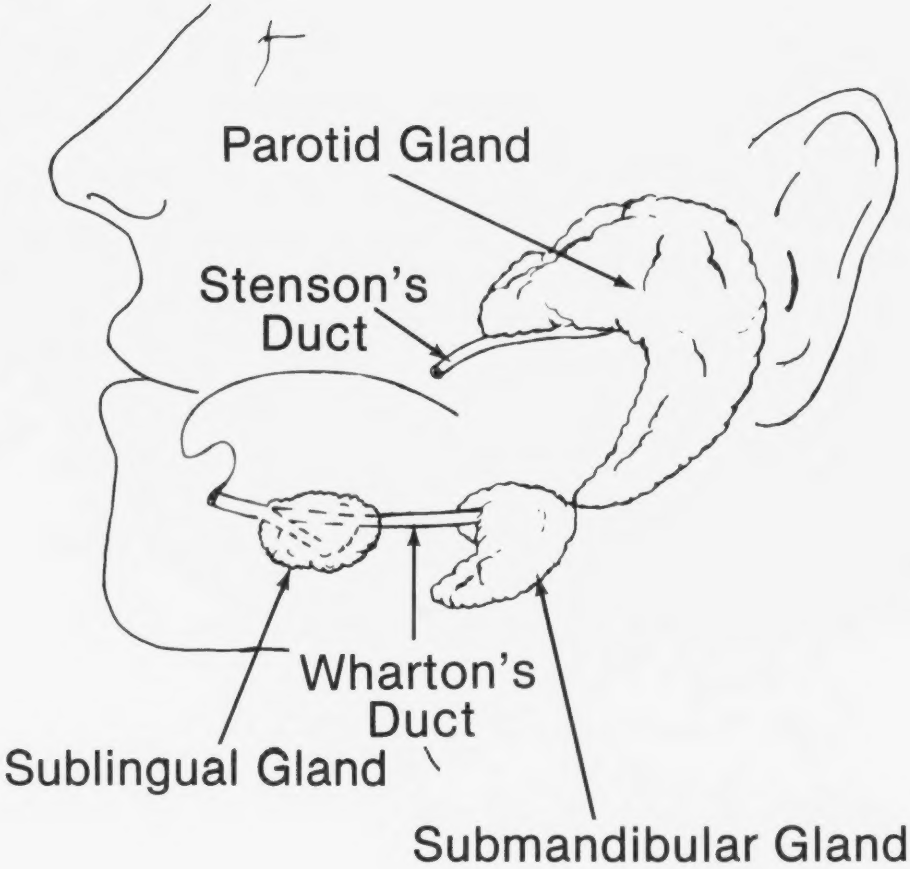
The Digestive Organs



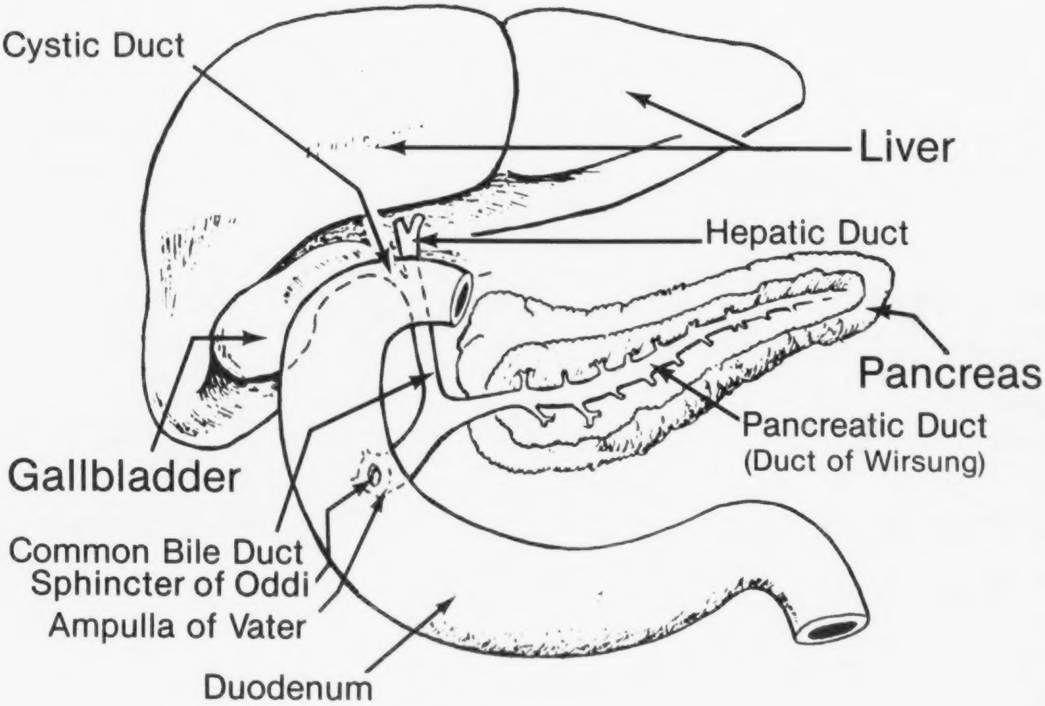
Structure of a Molar



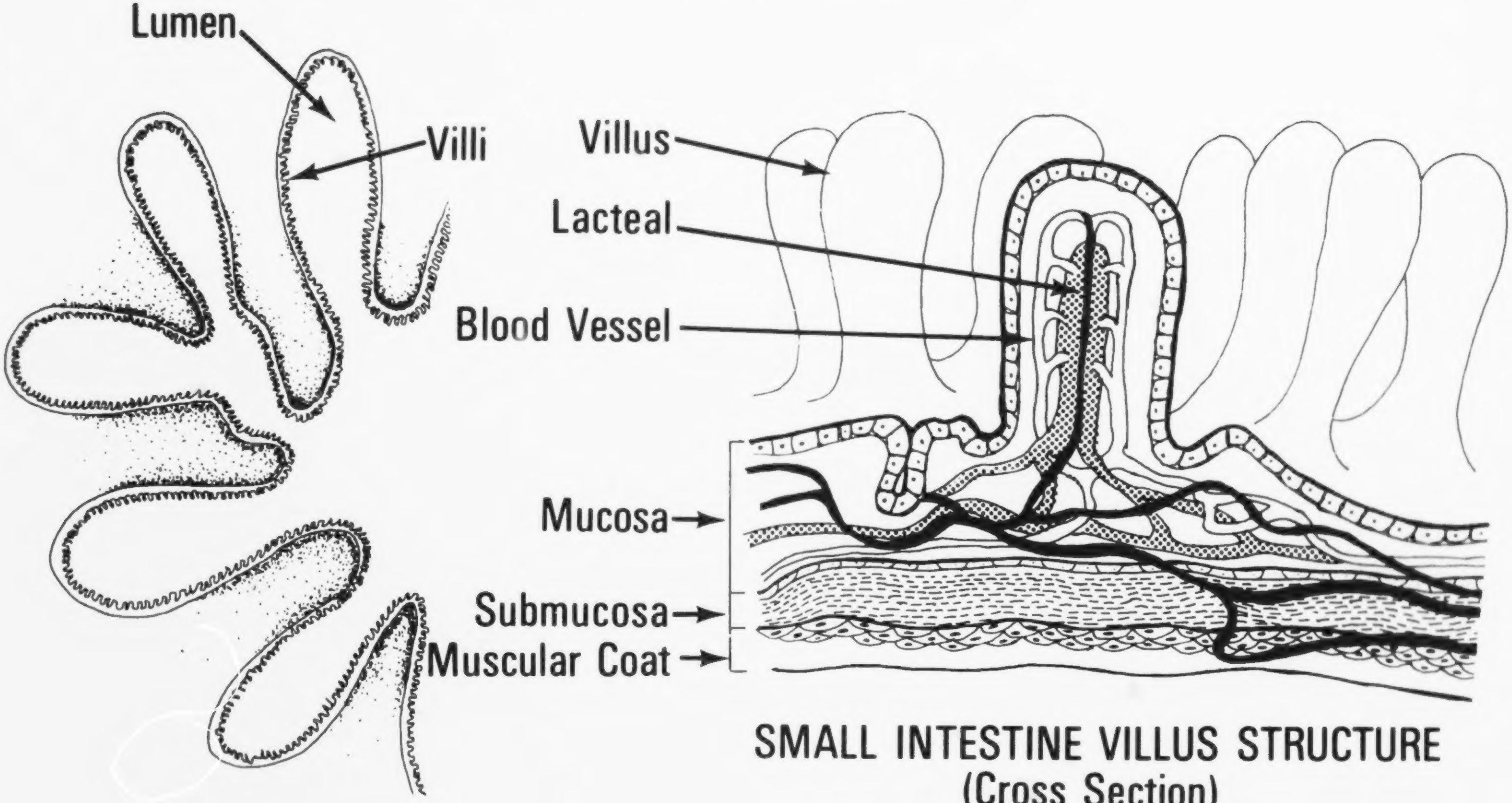
The Salivary Glands



The Liver, Gallbladder, and Pancreas

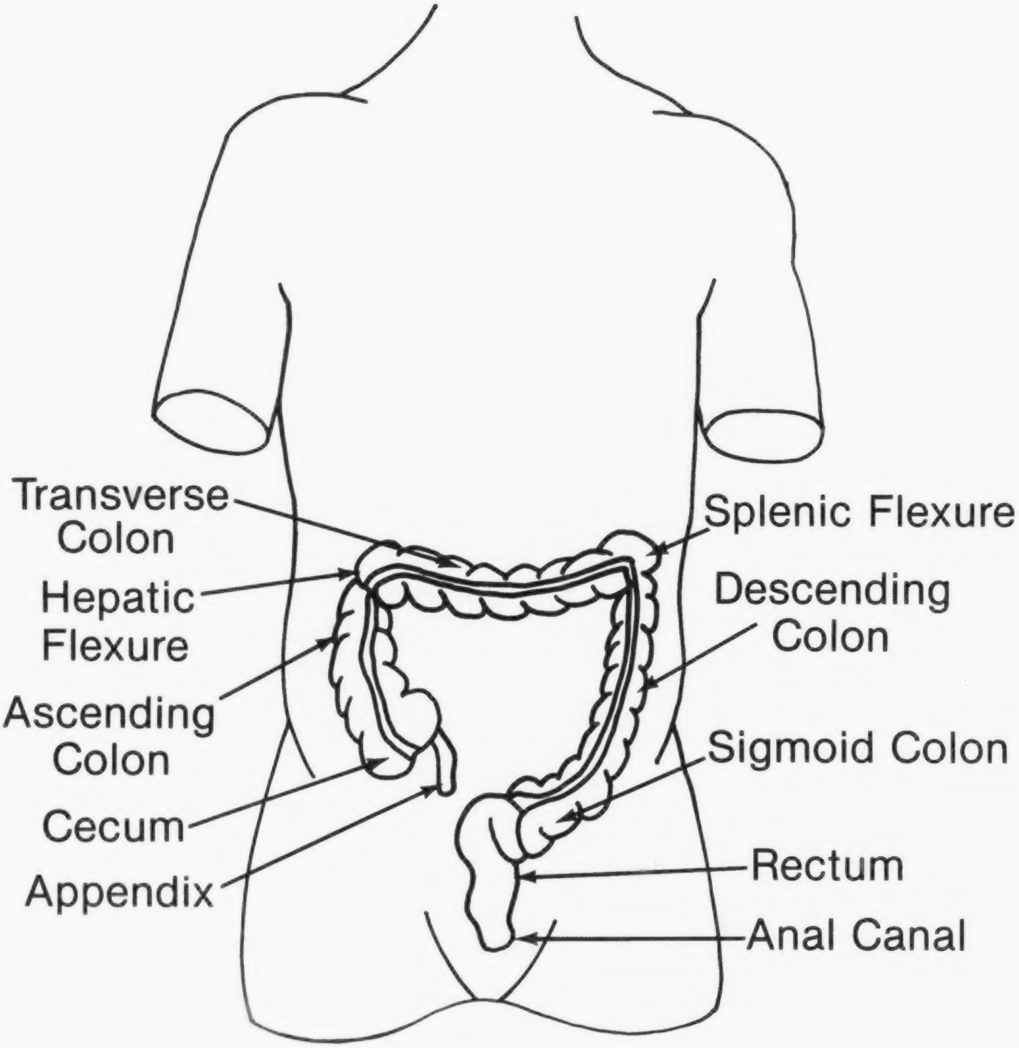


Structure of the Villi

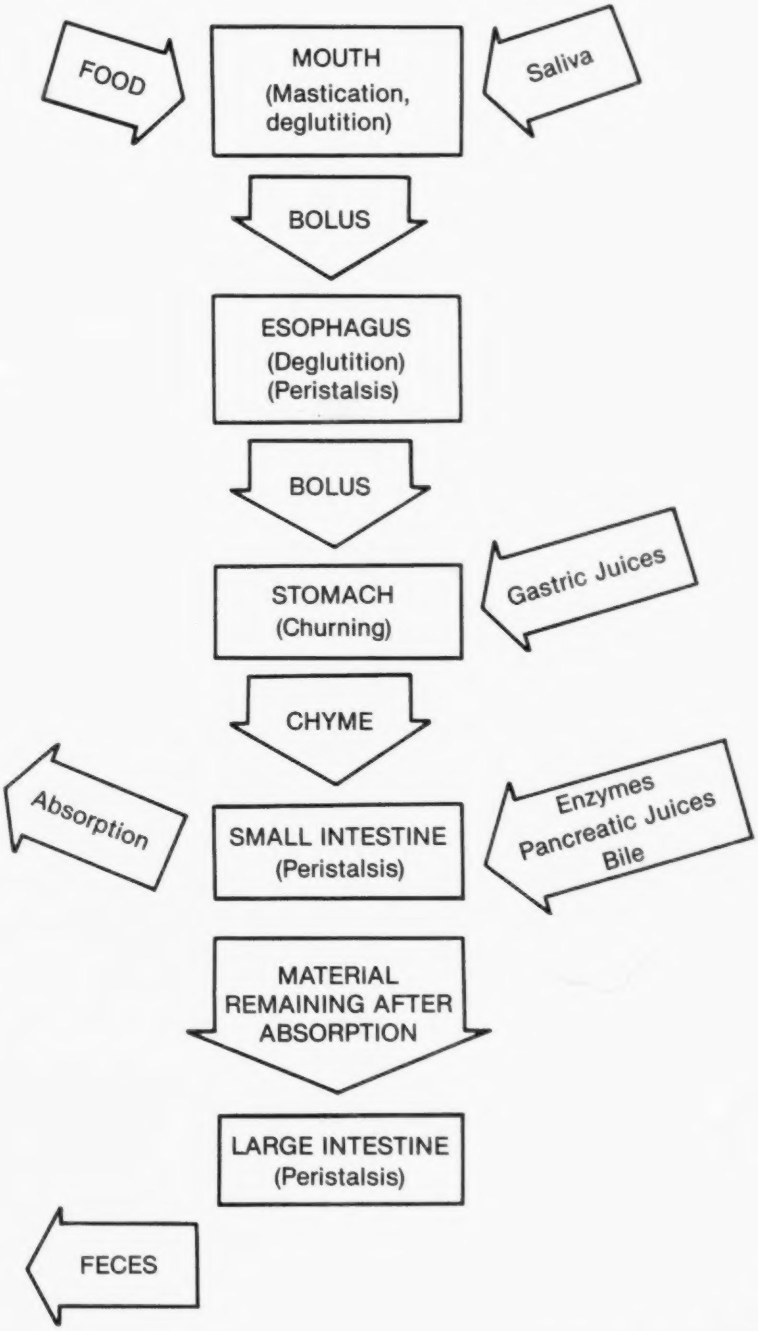


SMALL INTESTINE VILLUS STRUCTURE
(Cross Section)

Parts of the Large Intestine



Mechanical Digestion



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DIGESTIVE SYSTEM
UNIT VII

ANSWERS TO ASSIGNMENT SHEET

Assignment Sheet #1

A. 1
B. 1
C. 4
D. 1
E. 1
F. 4
G. 4
H. 3
I. 3
J. 3
K. 2
L. 1
M. 2
N. 2
O. 4
P. 3
Q. 4
R. 1
S. 2
T. 4
U. 2
V. 2
W. 2
X. 2
Y. 1
Z. 1
AA. 3
BB. 2
CC. 2
DD. 1
EE. 4
FF. 3
GG. 2
HH. 1
II. 3
JJ. 4
KK. 4
LL. 3
MM. 2
NN. 3
OO. 4
PP. 2
QQ. 3
RR. 3
SS. 1
TT. 2
UU. 2
VV. 4
WW. 4
XX. 4
YY. 3

DIGESTIVE SYSTEM
UNIT VII

TEST

NAME ______________________________________ SCORE ________________

1. Match to their correct definitions terms associated with the digestive system. Write the correct numbers in the blanks. Definitions are continued on the next page.

______a. Thick, sticky fluid secreted by some membranes and glands

______b. Pertaining to or caused by food

______c. General term for the chemical process taking place in living tissues and necessary for the maintenance of the living organism

______d. Process by which food is mechanically and chemically broken down in the gastrointestinal tract into simpler substances that are absorbed into the blood and lymph systems or eliminated from the body

______e. Small lump or mass of chewed food

______f. Gas in digestive tract

______g. Serous membrane over the viscera and lining the abdominal cavity

______h. Folds of mucous membrane on the internal surface of the stomach

______i. Nearly liquid mixture of partly digested food and digestive secretions found in the stomach and small intestine

______j. Ringlike muscle that controls an outlet, permitting it to open and close

______k. Chewing

______l. Complex protein capable of inducing a chemical change in another substance

______m. Food residue, bacteria, epithelium, and mucus discharged from the intestines

1. Metabolism
2. Villi
3. Gastroenterology
4. Sphincter
5. Alimentary
6. Bile
7. Rugae
8. Bolus
9. Peritoneum
10. Peristalsis
11. Chyme
12. Digestion
13. Enzyme
14. Mucus
15. Mastication
16. Feces
17. Flatus

TEST

______n. Branch of medical science that deals with the physiology and pathology of the digestive system

______o. Rhythmical waves of contraction that move food along the gastrointestinal tract

______p. Short, vascular, threadlike projections covering the mucous membrane of the small intestine

______q. Thick, yellow or greenish fluid secreted by the liver; aids in the digestion and absorption of fats

2. List the functions of the digestive system.

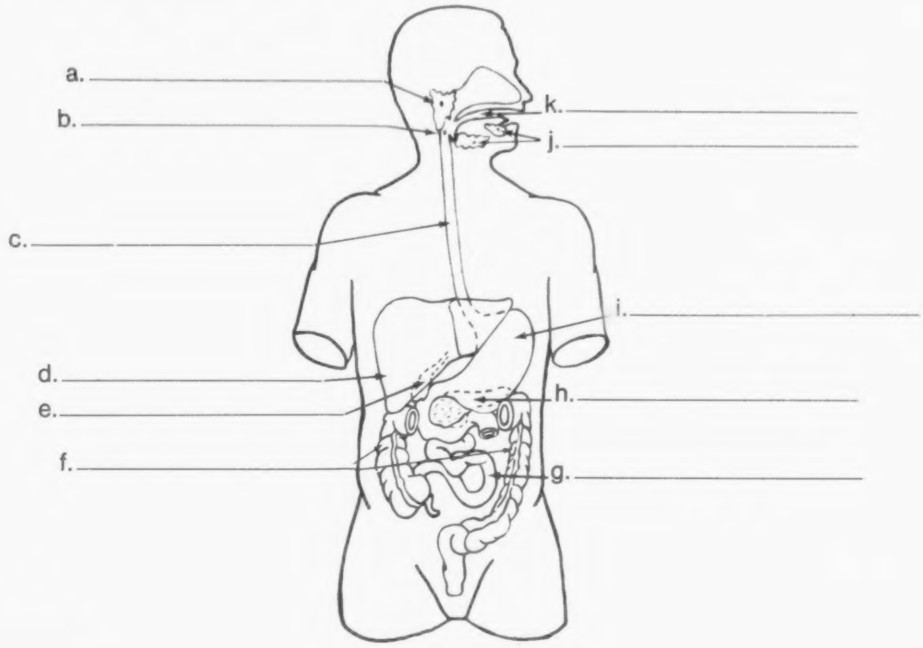
a. ______________________________

b. ______________________________

c. ______________________________

3. Identify the organs of the alimentary canal illustrated below. Write the correct names in the blanks. A name may be used more than once.

Large intestine
Small intestine
Stomach
Gallbladder
Esophagus
Pharynx
Liver
Salivary glands
Mouth (teeth and tongue)
Pancreas



TEST

4. Match organs of the alimentary canal to their correct functions. Write the correct numbers in the blanks.

______a. Permits speech and taste, forces food between teeth, and moves food through mouth

______b. Stores and concentrates bile and contracts to eject bile into small intestine when needed

______c. Begins the breakdown of food physically with teeth and tongue, and chemically with saliva, and moves food on to pharynx

______d. Acts as a passageway for food from pharynx to stomach

______e. Reabsorbs water and discharges digestive wastes

______f. Acts as a passageway for air from nasal cavity to larynx and for food from mouth to esophagus, and acts as a resonating cavity for voice production

______g. Chew, crush, and grind food

______h. Produces bile, stores glycogen, regulates the changing of glucose, stores iron and certain vitamins, and changes protein into urea for elimination

______i. Receives bile and pancreatic juices, and produces an intestinal hormone that stimulates associated digestive organs to produce their secretions; does greatest amount of digestion and absorption of food

______j. Secrete saliva that lubricates food, making it easier to chew and swallow; contains digestive juices that act upon carbohydrates and soften food

______k. Produces pancreatic juice and insulin that aid in metabolism

______l. Connects esophagus to small intestine, secretes gastric juices that aid in digestion of food, and serves as a temporary receptacle for food while it undergoes certain mechanical and chemical processes that change food to chyme

Primary organs

1. Mouth
2. Pharynx
3. Esophagus
4. Stomach
5. Small intestine
6. Large intestine

Accessory organs

7. Teeth
8. Tongue
9. Salivary glands
10. Pancreas
11. Liver
12. Gallbladder

TEST

5. Select from the following list correct statements concerning the mouth. Write an "X" in the blank before each correct statement.

______a. Is a nearly ball-shaped cavity

______b. Roof of mouth is formed by the hard and soft palates

______c. Hard palate consists of a hard portion in the back of mouth that aids in speech production

______d. Soft palate is a movable fold of mucous membrane in front of mouth that prevents passage of food to nose

______e. Mouth contains teeth set in sockets called *alveolar processes*

______f. Each socket is lined with peridental enamel, which attaches teeth to socket and is a source of nourishment for teeth

______g. Sockets are covered by gums, dense connective tissue covered by mucous membrane

______h. Two sets of teeth develop during life

______i. Twenty deciduous teeth (baby teeth) appear between 6 months and 1 year

______j. Thirty-four permanent teeth replace deciduous teeth and appear between ages 6 and 17 years

______k. The mouth contains three pairs of salivary glands

______l. Most of the floor of the mouth is formed by the teeth

6. Match classes of teeth to their correct functions. Write the correct numbers in the blanks.

______a. Adapted for grinding food

______b. Adapted for biting and tearing food

______c. Adapted for crushing food

______d. Adapted for biting food

1. Bicuspids (8 premolars)
2. Cuspids (4)
3. Incisors (8)
4. Tricuspids (12 molars)

7. Match salivary glands to their correct descriptions. Write the correct numbers in the blanks.

______a. Located in posterior part of floor of mouth; secrete primarily serous fluid with some mucus

______b. Largest glands located under and in front of each ear; secrete clear, watery serous fluid and an enzyme called *amylase*

______c. Located in anterior part of floor of mouth under tongue; secrete primarily thick mucus

1. Parotid
2. Submandibular (submaxillary)
3. Sublingual

TEST

8. Select from the following list correct characteristics of the stomach. Write an "X" in the blanks before each correct characteristic.

_____a. Is an elongated pouch in upper right quadrant between esophagus and small intestine

_____b. Size varies with sex and other factors

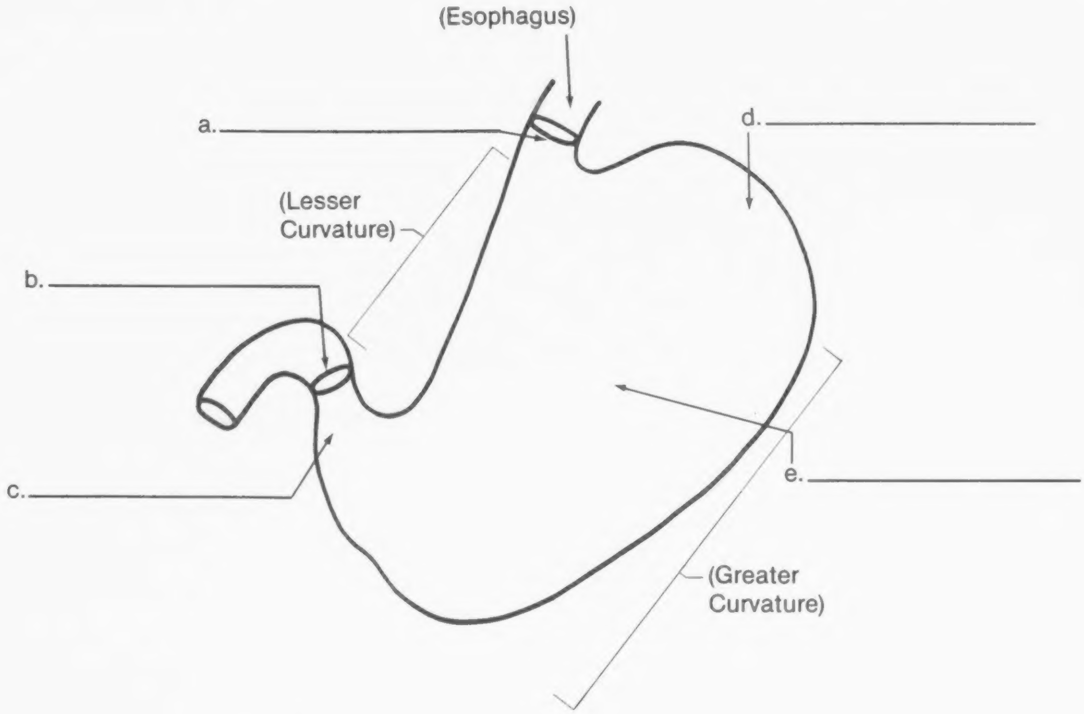
_____c. Can hold up to two quarts of food until it is ready to be received into the large intestine

_____d. Dilates according to amount of food ingested

_____e. When not distended, the mucous coat lies in folds known as *rugae*

9. Identify the sections of the stomach illustrated below. Write the correct names in the blanks.

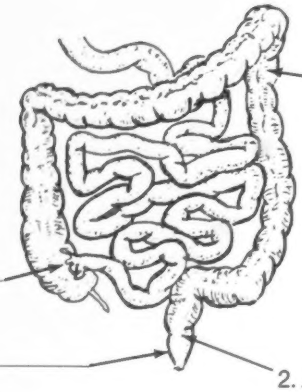
Body
Pylorus
Cardiac sphincter
Fundus
Pyloric sphincter



TEST

10. Label divisions of the small and large intestines. Write the correct names in the blanks.

a. Large intestine



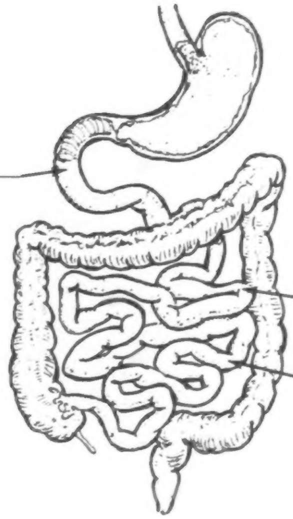
1. ________________________

2. ________________________

3. ________________________

4. ________________________

b. Small intestine



1. ________________________

2. ________________________

3. ________________________

TEST

11. Match to their correct divisions characteristics of the small and large intestines. Write the correct numbers in the blanks.

______a. Is about 5 feet long and extends from iliocecal junction to rectum; is a continuous tube but is subdivided into four portions: ascending, transverse, descending, and sigmoid

______b. Attaches to pyloric end of stomach and is about 10 feet long; is the shortest and broadest part of small intestine; is the most common site for ulcers

______c. Is last 1 to 1 ½ inches (2-4 cm) of large intestine; ends at opening called the anus, which contains smooth internal and striated external sphincter muscles; has mucous lining arranged in numerous vertical folds known as rectal columns or Houston valves, each of which contains an artery and a vein

______d. Is located in upper central part of abdomen; is middle portion of small intestine, extending about 8 feet from duodenum

______e. Is last 7 or 8 inches (17-21 cm) of the gastrointestinal tract; is located between sigmoid colon and anal canal

______f. Is first 2 or 3 feet of large intestine; contains worm-shaped diverticulum (appendix), which is 3 to 6 inches (7-16 cm) long; has openings from ileum, colon, and appendix

______g. Is lower portion of small intestine, extending about 12 to 15 feet from jejunum; ends at ileocecal valve, where it joins the colon at a right angle

1. Anal canal
2. Cecum
3. Colon
4. Duodenum
5. Ileum
6. Jejunum
7. Rectum

12. List five ways of maintaining a healthy digestive system.

a. ____

b. ____

c. ____

d. ____

e. ____

TEST

13. Describe the education and duties of three health occupations concerned with the digestive system.

a. ____

b. ____

c. ____

DIGESTIVE SYSTEM
UNIT VII

ANSWERS TO TEST

1. a. 14
   b. 5
   c. 1
   d. 12
   e. 8
   f. 17
   g. 9
   h. 7
   i. 11
   j. 4
   k. 15
   l. 13
   m. 16
   n. 3
   o. 10
   p. 2
   q. 6

2. a. Breaks down food in preparation for absorption by body
   b. Absorbs broken down food
   c. Discharges wastes resulting from digestion

3. a. Salivary gland
   b. Pharynx
   c. Esophagus
   d. Liver
   e. Gallbladder
   f. Large intestine
   g. Small intestine
   h. Pancreas
   i. Stomach
   j. Salivary glands
   k. Mouth (Teeth and Tongue)

4. a. 8
   b. 12
   c. 1
   d. 3
   e. 6
   f. 2
   g. 7
   h. 11
   i. 5
   j. 9
   k. 10
   l. 4

5. b, e, g, h, i, k

6. a. 1
   b. 2
   c. 4
   d. 3

7. a. 2
   b. 1
   c. 3

ANSWERS TO TEST

8. b, d, e

9. a. Cardiac sphincter
    b. Pyloric sphincter
    c. Pylorus
    d. Fundus
    e. Body

10. a. 1. Colon
        2. Rectum
        3. Anal canal
        4. Cecum

    b. 1. Duodenum
        2. Jejunum
        3. Ileum

11. a. 3
    b. 4
    c. 1
    d. 6
    e. 7
    f. 2
    g. 5

12. Answer should include any five of the following

    a. Do not smoke
    b. Avoid heavy lifting
    c. Avoid straining during bowel movements
    d. Avoid prolonged use of laxatives
    e. Limit intake of sweets, fats, spicy foods, alcohol, and caffeine
    f. Eat a balanced diet
    g. Eat a diet high in fiber
    h. Drink plenty of fluids
    i. Observe regular mealtimes
    j. Brush and floss teeth after meals
    k. Empty bowels regularly and promptly
    l. Exercise regularly
    m. Learn to manage stress
    n. After age 25, visit your physician for an annual physical

13. Answer should include description of any three occupations listed in Section XIII of the Information Sheet

REPRODUCTIVE SYSTEM
UNIT VIII

SUGGESTED ACTIVITIES

I. Unit contents

- A. Objective sheet
- B. Suggested activities
- C. Supplements
  1. Supplement #1 — Crossword Puzzle
  2. Supplement #2 — Common Diseases and Disorders of the Reproductive System
- D. Transparency masters
  1. TM #1 — Ovum and Sperm
  2. TM #2 — Male Reproductive System
  3. TM #3 — Female Reproductive System
  4. TM #4 — Internal Female Genitalia
  5. TM #5 — External Female Genitalia
  6. TM #6 — The Breast
  7. TM #7 — The Menstrual Cycle
- E. Information sheet
- F. Assignment sheets
  1. Assignment Sheet #1 — Label Structures of the Male Reproductive Organs
  2. Assignment Sheet #2 — Label Structures of the Female Reproductive Organs
  3. Assignment Sheet #3 — Complete Statements Concerning the Reproductive System
- G. Answers to assignment sheets
- H. Test

SUGGESTED ACTIVITIES

I. Answers to test

II. Instructor's guide

A. Review unit and plan presentation.

B. Order or obtain materials to supplement unit.

1. Films

a. *Puberty in Boys*, 10 minutes, 1968. Available from Films, Inc., 733 Green Bay Road, Wilmette, Illinois 60091. Designed to give boys a basic understanding of the changes that occur during puberty, the film gives a young boy a personal view into his physical changes as well as a sense of respect for the complicated working of man.

b. *Female Cycle*, 8 minutes, 1972. Available from Films, Inc., 733 Green Bay Road, Wilmette, Illinois 60091. Through animation, the complete story of menstruation is told simply and understandably.

(NOTE: These films are available to Oklahoma teachers on a free-loan basis. Oklahoma teachers may order from the State Department of Vocational/Technical Education, Film Library, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364. Out-of-state teachers must order from the address listed with the films.)

2. Transparencies and competency profiles

(NOTE: Transparencies and competency profiles for this unit are available from the State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

C. Introduce unit.

- Discuss the part played by reproduction in ecology and population control.
- Ask the students how many siblings their parents had, then grandparents. Have them think of reasons for smaller families today.
- Differentiate between gynecologist and an obstetrician.

D. Discuss unit and specific objectives.

E. Discuss information sheet and assignment sheets.

1. Use Information Sheet, Section I, to discuss terms and definitions associated with the reproductive system.

2. Use Information Sheet, Section II, to discuss the functions of the reproductive system.

    - Discuss how a person's sexuality is incorporated into holistic health.

SUGGESTED ACTIVITIES

- When discussing hormones, have the students consider the complaints of menopause and PMT.

3. Use Information Sheet, Section III, to discuss development of human reproductive organs.

   - Explain that at birth, the testes should have traveled down the inguinal canal to the scrotum. If they have not, the higher temperature in the abdomen will cause sterility. Undescended testes is considered to be a "pre-cancerous" condition.

   - Bring out the stormy emotional period that may accompany the physical changes of puberty.

4. Use Information Sheet, Section IV, to discuss secondary sex characteristics.

   - Point out that hormones from the opposite sex will cause a person to develop secondary sex characteristics of that sex. Medications given for cancer sometimes do contain hormones from the opposite sex; the side effects of these medications are frequently distressing to the individual receiving them.

     EXAMPLES: A female who is given testosterone may develop facial hair. A male who is given estrogen may develop breasts.

5. Use Information Sheet, Sections V-VII, to discuss structure and function of the male reproductive system.

   - Show Transparency #1 to illustrate the difference in relative size between the sperm and the ovum.

   - Show Transparency #2 to point out the structures that form the male reproductive system.

   - Mention that sperm is viable for 72 hours.

   - Discuss sex determination of a child. Male sex cells can carry the Y or X chromosome, female sex cell only the X. If a Y cell unites with an ovum, a male will result; if X unites with the ovum, then a female will result.

   - Point out that testicular cancer is a fairly common type of cancer in young men and that men of all ages should have periodic checks for testicular cancer.

6. Use Information Sheet, Sections VIII-X, to discuss structure and function of the female reproductive system.

   - Use Transparencies #3-#6 to illustrate the various structures of the female reproductive system.

   - Mention that ovum is viable for 24 hours.

SUGGESTED ACTIVITIES

- Discuss children born with characteristics of both sexes, and the problems they might have to deal with.
- Point out that women can help in the early detection of cancer by performing a monthly breast examination and having an annual Pap smear (Papanicolaou test).

7. Use Information Sheet, Section XI, to discuss the menstrual cycle.

   - Have the students think of euphemisms used to describe menstruation.

     EXAMPLES: "The curse," "being a lady"

   - Stress that menstruation is a normal process, and severe discomfort is abnormal.
   - Point out that normal cycles vary from one individual to another and that 28 days is just an average.
   - Show Transparency #7.
   - Ask the students how they feel about the court decision where a woman was excused from a murder conviction on the grounds of premenstrual tension.
   - Point out hormonal effects of menstruation.

     EXAMPLES: Strong emotions, acne

8. Use Information Sheet, Section XII, to discuss physiological changes that occur during menopause.

   - Ask the students what symptoms they have heard women complain about while going through menopause.

     EXAMPLES: Hot flashes

   - Discuss the fact that while some people have many symptoms, others have little or no discomfort.

9. Use Information Sheet, Section XIII, to discuss health occupations related to the reproductive system.

   - Have a representative from one of the occupations as a guest speaker to discuss the role and responsibilities of that occupation.
   - Take a field trip to the obstetrical unit at your local hospital.
   - Have the students complete Assignment Sheets #1-#3 to reinforce material used in the information sheet.
   - Have the students complete Supplement #1, the crossword puzzle.
   - Discuss Supplement #2.

SUGGESTED ACTIVITIES

F. Review material and give test.

G. Critique test and discuss with class.

H. Reteach and retest if necessary.

I. Complete appropriate section of students' competency profiles.

III. Unit references

A. Boyles, Marcia V., Margaret K. Morgan, and Mary H. McCauley. *The Health Professionals*. Philadelphia: W.B. Saunders Company, 1982.

B. Kellum, Mary. *Anatomy and Physiology*. Stillwater, Oklahoma: Mid-America Vocational Consortium, Inc., 1984.

C. Sloan, Jamee Reid. *Health Service Careers*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1979.

D. Rogers, Helen V. and Ann Benson. *Practical Nursing: Volume I*, rev. by Jamee Reid Sloan. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1981.

REPRODUCTIVE SYSTEM
UNIT VIII

SUPPLEMENT #1 — CROSSWORD PUZZLE

Test your knowledge of terms associated with the reproductive system by working this crossword puzzle. Use the clues below to fill out the puzzle on the next page.

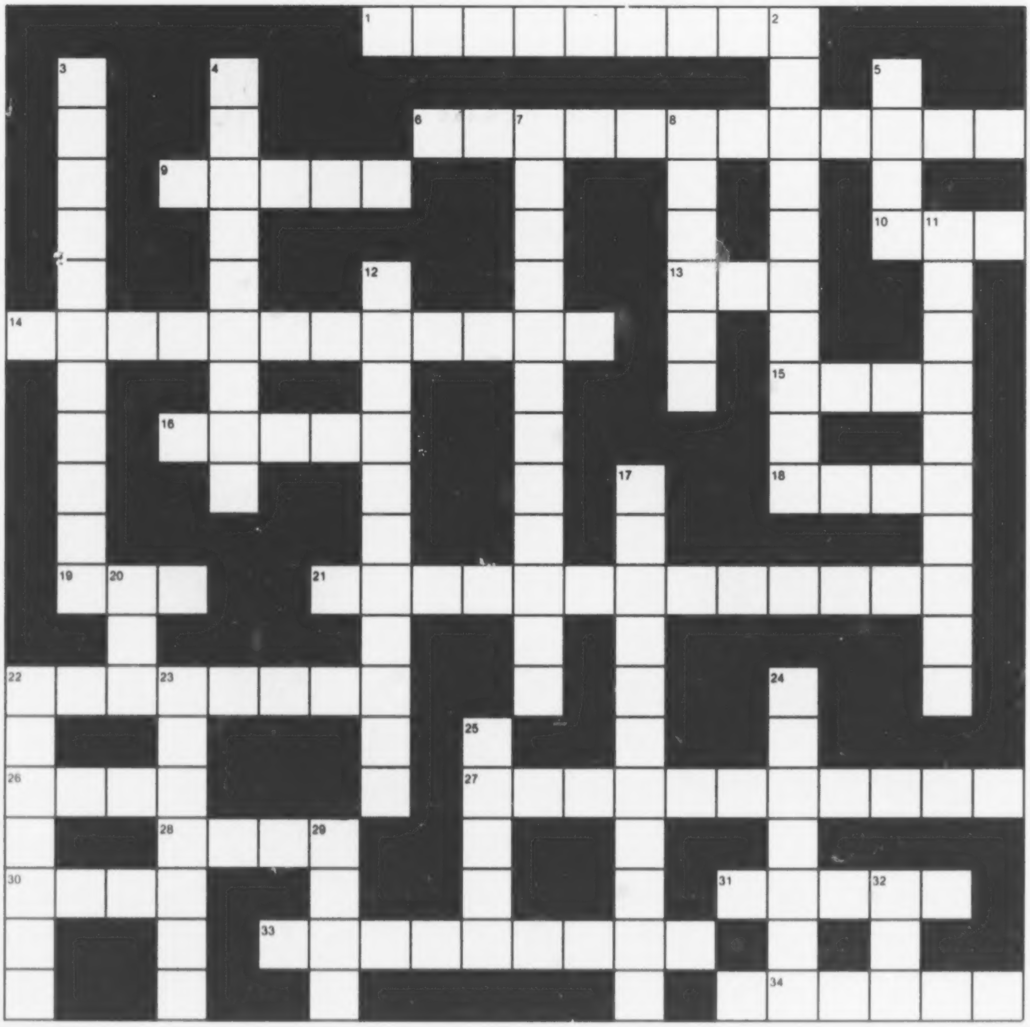
ACROSS

1. Period in life that marks the cessation of menstruation
6. Surgical removal of the prepuce
9. Pertaining to the os pubis
10. Self
13. Peculiar
14. Periodic discharge of bloody fluid from the uterus
15. Cruel
16. Sex gland
18. Hit with open hand
19. Adult male
21. Process by which the sperm unites with the ovum
22. Gland that secretes alkaline fluids that enhance sperm mobility, aids ejaculation
26. Ale
27. Ducts that convey milk
28. Female sex cell
30. Violent disturbance
31. External female genitalia
33. Cord suspending the testes
34. What the scrotum contains

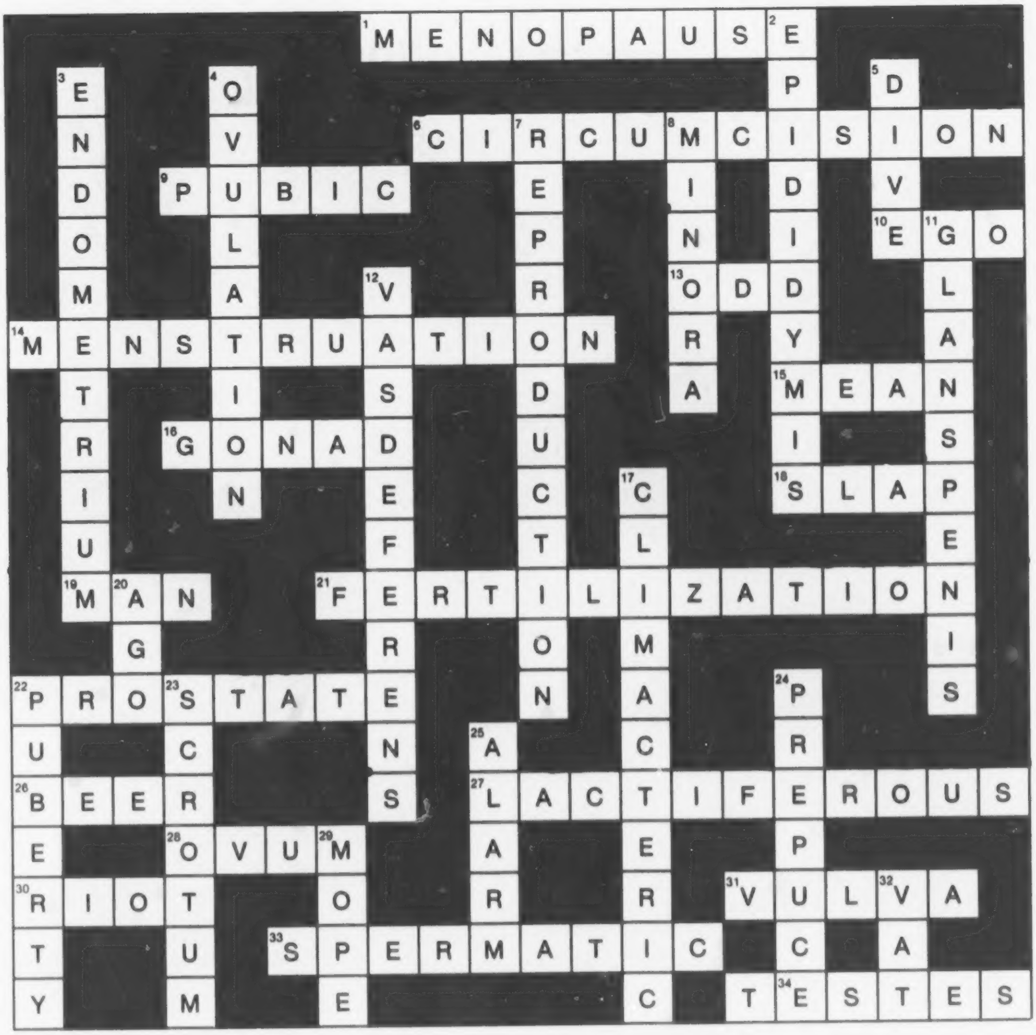
DOWN

2. Collects and stores sperm while maturing; conducts sperm to outside
3. Mucous membrane lining of uterus
4. Expulsion of an ovum
5. Plunge
7. Process by which a living organism produces a new individual of the same kind
8. Labia ______ encloses the vestibule
11. Head of penis
12. Transports sperm from the testes to the urethra (2 wds)
17. Period that marks the cessation of reproductive function
20. Past
22. Period in life when one becomes functionally capable of reproduction
23. External pouch
24. Foreskin
25. Siren
29. Pout
32. Keg

SUPPLEMENT #1



SUPPLEMENT #1

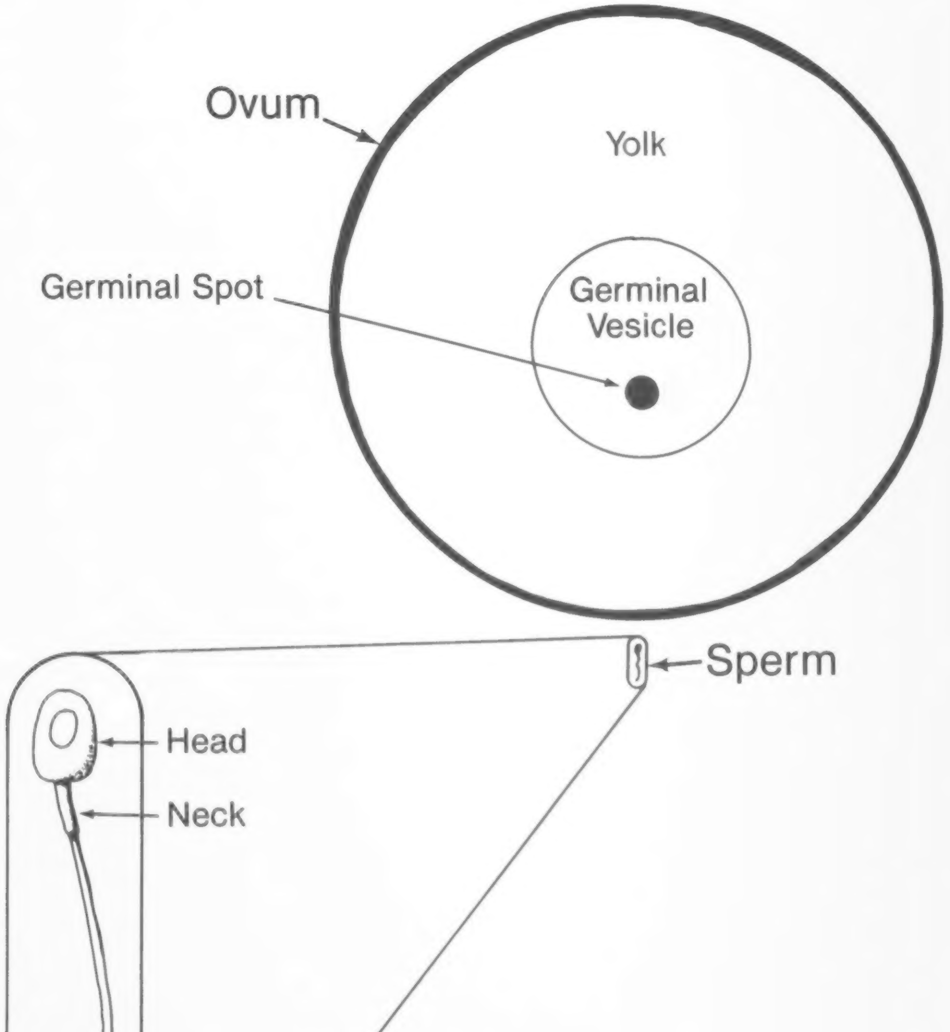


REPRODUCTIVE SYSTEM
UNIT VIII

SUPPLEMENT #2 — COMMON DISEASES AND DISORDERS OF THE REPRODUCTIVE SYSTEM

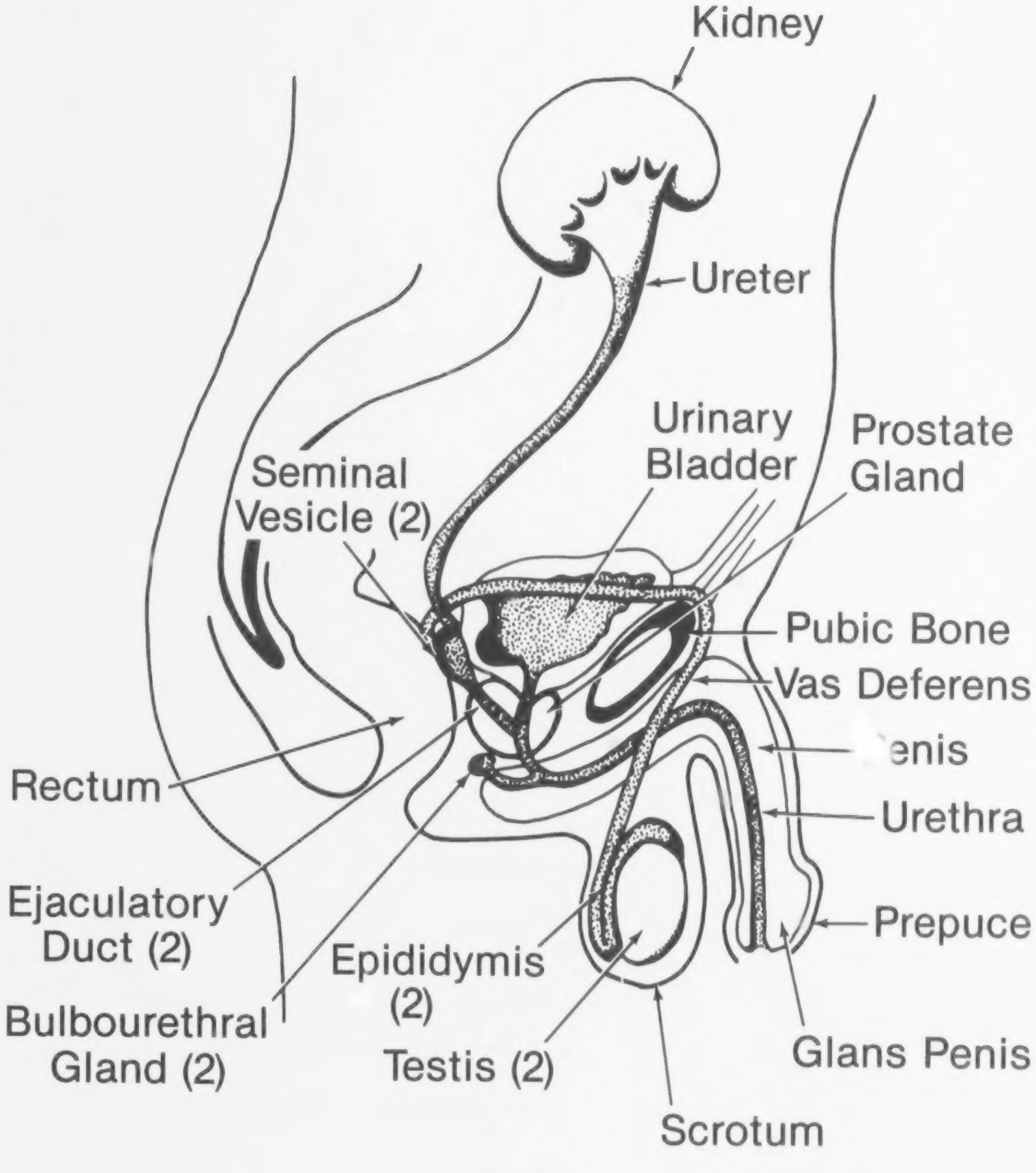
Type	Disease/Disorder	Description
Congenital	Cryptoorchidism	Undescended testicles
	Hypospadias	Urethra opens on underside of the penis
	Supernumerary breasts	Extra number
Degenerative	Menopause	Cessation of reproductive cycle
Infectious	Cervicitis	Inflammation of cervix
	Endometritis	Inflammation of endometrium
	Oophoritis	Inflammation of ovary
	Orchitis	Inflammation of testis
	Prostatitis	Inflammation of prostate
	Salpingitis	Inflammation of fallopian tubes
	Trichomonas vaginalis	Parasitic infection
	Vaginitis	Inflammation of vagina
	Venereal diseases	See Social Health unit
Metabolic	Cystic mastitis	Cysts on breast
	Dysmenorrhea	Painful menstruation
	Gynecomastia	Excessive development of mammary glands in the male
	Prostatic hypertrophy	Enlargement of the prostate
Neoplastic	Carcinoma	
	Carcinoma of cervix	
	Carcinoma of prostate	
	Carcinoma of testis	
	Fibroma of uterus	
	Venereal warts	
Psychiatric	Frigidity	
	Impotence	

Ovum and Sperm

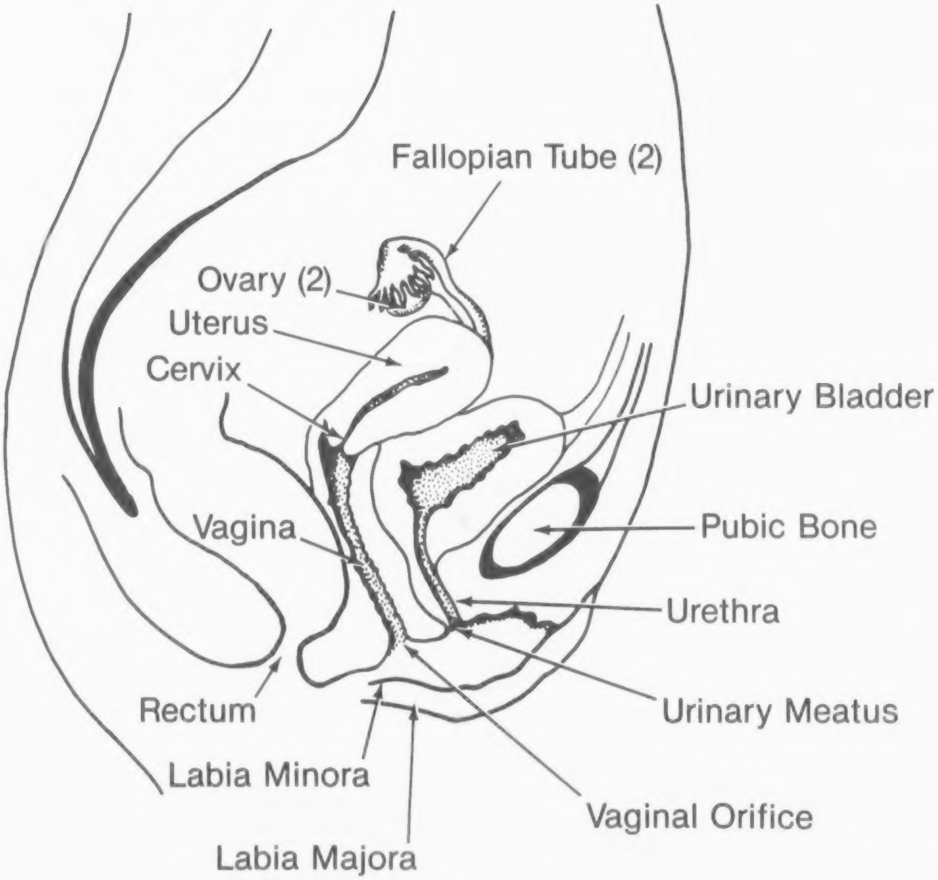


Enlarged View of Sperm

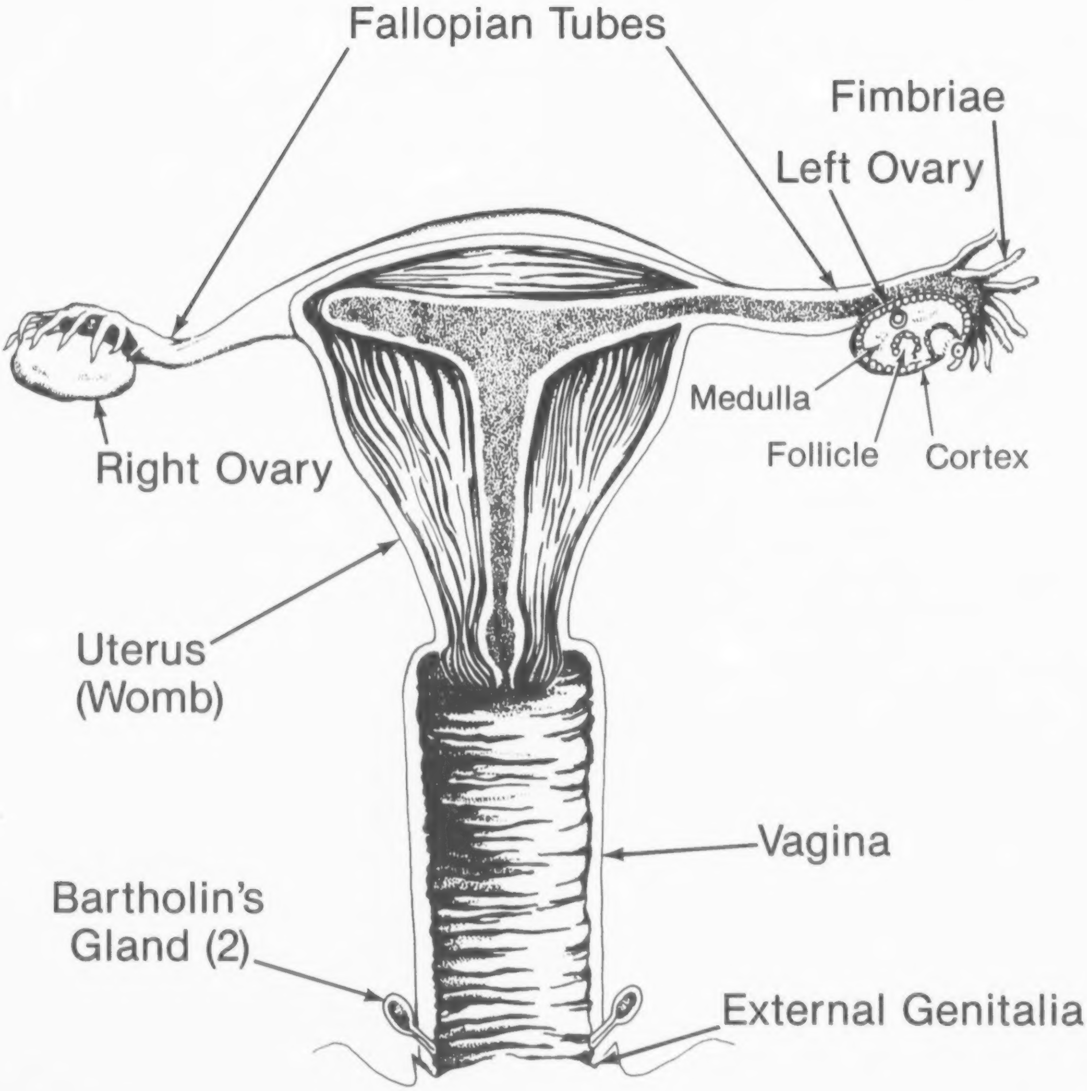
Male Reproductive System



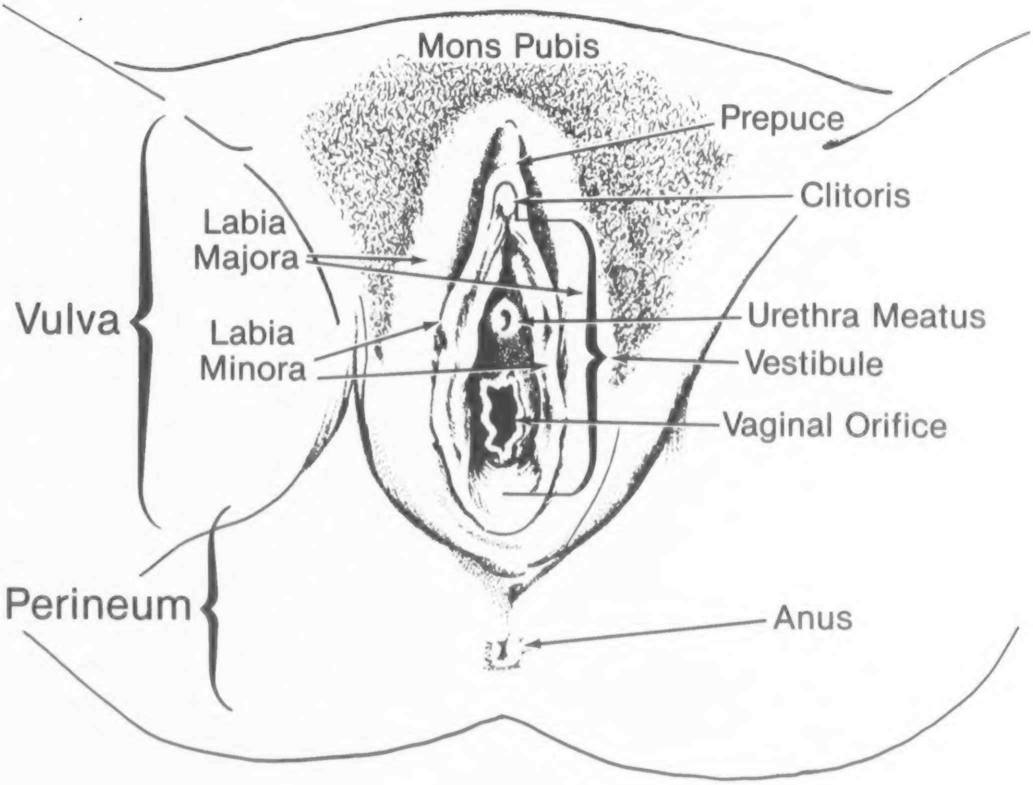
Female Reproductive System



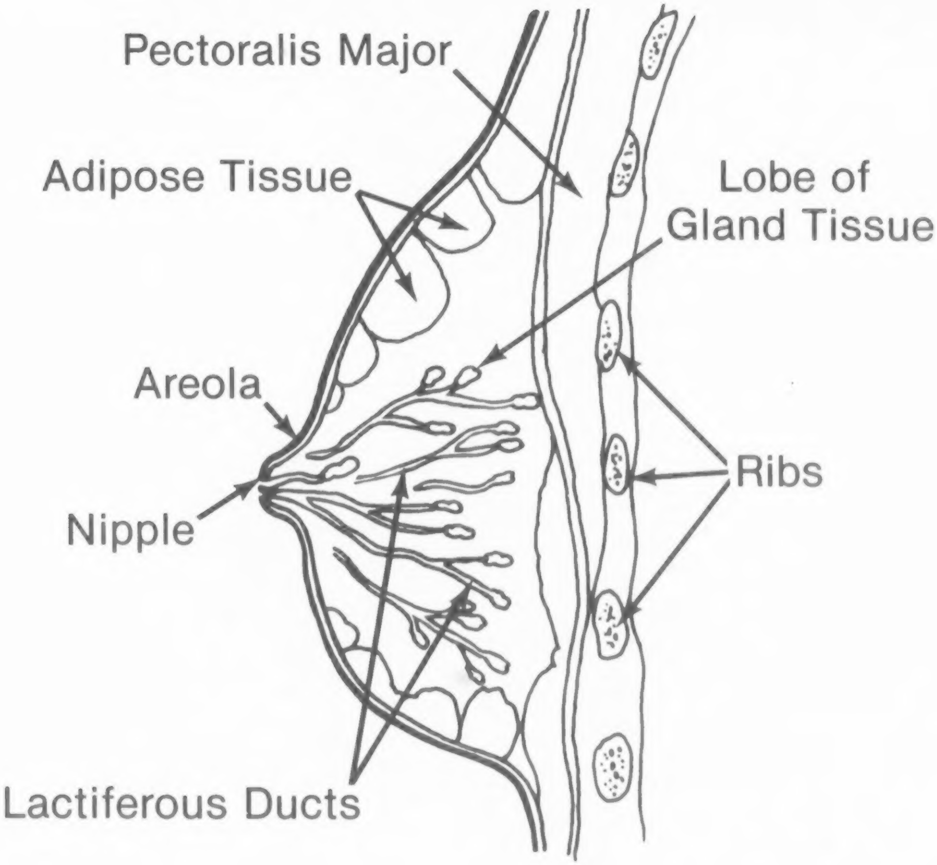
Internal Female Genitalia



External Female Genitalia

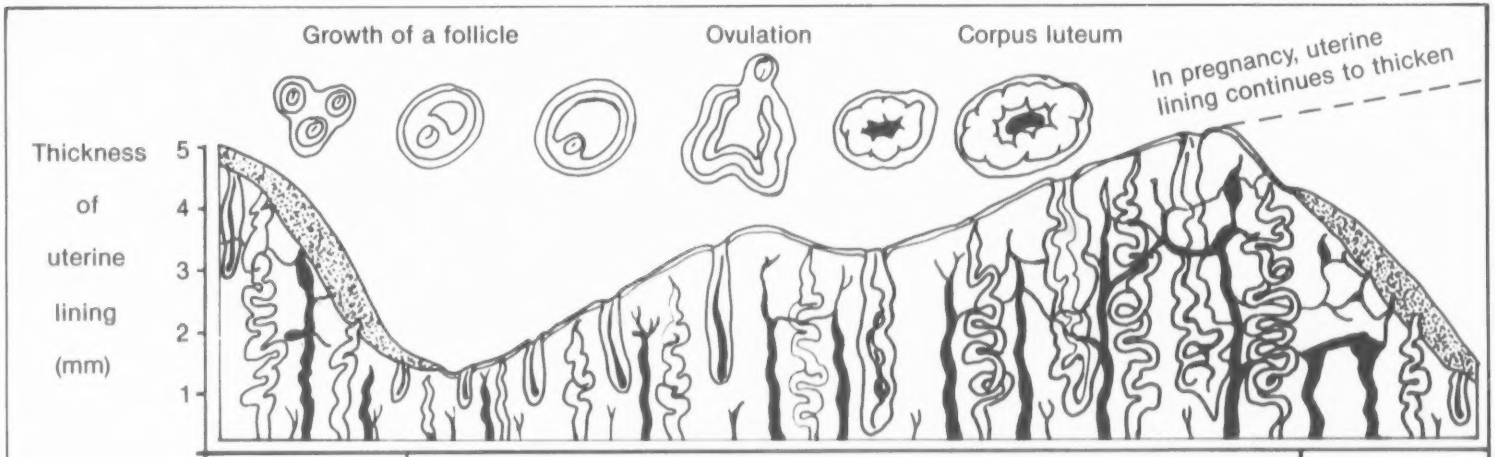


The Breast


Pectoralis Major
Adipose Tissue
Lobe of Gland Tissue
Areola
Ribs
Nipple
Lactiferous Ducts

The Menstrual Cycle

- MENSTRUATION
- OVULATION


Growth of a follicle
Ovulation
Corpus luteum
In pregnancy, uterine lining continues to thicken
Thickness of uterine lining (mm)
5
4
3
2
1

	Menstruation	Rebuilding of the uterine lining, coiled arteries and glands			Menstruation
Duration days	1 → 5	6 → 14	15 → 20	21 → 28	1 → 5

DAYS INDICATED ARE APPROXIMATE

Illustration from *Pregnancy in Anatomical Illustration*, 1984 edition. Courtesy of the copyright owner Carnation Company, Los Angeles, California, 1962.

REPRODUCTIVE SYSTEM
UNIT VIII

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

A. Kidney
B. Ureter
C. Urinary bladder
D. Prostate gland
E. Pubic bone
F. Vas deferens
G. Penis
H. Urethra
I. Prepuce
J. Glans penis
K. Scrotum
L. Testis
M. Epididymis
N. Bulbourethral glands
O. Ejaculatory duct
P. Rectum
Q. Seminal vesicle

Assignment Sheet #2

A.
1. Vagina
2. Cervix
3. Uterus
4. Ovaries
5. Fallopian tubes
6. Urinary bladder
7. Pubic bone
8. Urethra
9. Urinary meatus
10. Vaginal orifice
11. Labia majora
12. Labia minora
13. Rectum

B.
1. Mons pubis
2. Prepuce
3. Clitoris
4. Urethra meatus
5. Vestibule
6. Vaginal orifice
7. Anus
8. Perineum
9. Vulva
10. Labia minora
11. Labia majora

C.
1. Lactiferous ducts
2. Nipple
3. Areola
4. Adipose tissue
5. Pectoralis major
6. Lobe of gland tissue
7. Ribs

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #3

A. 1
B. 3
C. 1
D. 4
E. 2
F. 4
G. 2
H. 2
I. 3
J. 4
K. 4
L. 3
M. 4
N. 4
O. 4
P. 3
Q. 2
R. 3
S. 3
T. 3
U. 4
V. 3
W. 2
X. 2
Y. 4
Z. 1
AA. 3
BB. 1
CC. 1
DD. 1

REPRODUCTIVE SYSTEM
UNIT VIII

TEST

NAME ______________________________ SCORE ______________

1. Select correct terms associated with the reproductive system, given their definitions. Write the correct numbers in the blanks.

_____a. System involved in the creation of offspring

1) Genital
2) Gonadal
3) Obstetrical
4) Reproductive

_____b. Period that marks the cessation of reproductive function in the female, and diminished sexual activity in the male

1) Climacteric
2) Climatrical
3) Menopause
4) Menstruation

_____c. Pertaining to the os pubis, the anterior bone of the pelvis

1) Ossicle
2) Perineum
3) Puberty
4) Pubic

_____d. Female and male sex glands

1) Ducts
2) Genitals
3) Gonads
4) Organs

_____e. Process by which the sperm unites with the ovum

1) Copulation
2) Fertilization
3) Implantation
4) Menstruation

_____f. Area between external genitalia and anus

1) Endometrium
2) Implantation
3) Perineum
4) Puerperium

TEST

_____g. Process by which a living organism produces a new individual of the same kind

1) Cloning
2) Copulation
3) Fertilization
4) Reproduction

_____h. Period in life at which one becomes functionally capable of reproduction

1) Maturation
2) Menstruation
3) Puberty
4) Reproduction

2. List the functions of the reproductive system.

a. ______________________________

b. ______________________________

c. ______________________________

3. Complete the following statements concerning the development of the human reproductive organs. Circle the correct words.

a. By the end of the (first, third) month, the sex of the fetus is clearly distinguishable.

b. At birth the testes (do, do not) contain thousands of immature spermatocytes.

c. From birth to the age of puberty, the reproductive organs (do, do not) grow with the rest of the body.

d. Puberty is indicated in the male by production of functional (testosterone, spermatozoa) and in the female by the onset of ovulation and menstruation.

e. The female gonads usually become inactive (no longer produce gametes) at about the age of (45, 65).

4. List two secondary sex characteristics for both male and female.

a. Male

1) ______________________________

2) ______________________________

TEST

b. Female

1) ______________________________

2) ______________________________

5. Select terms associated with the male reproductive system. Write the correct numbers in the blanks

_____a. Foreskin

1. Glans penis
2. Scrotum
3. Spermatic cord
4. Prepuce

_____b. Cord suspending the testes

1. Scrotal
2. Seminal
3. Spermatic
4. Suspensional

_____c. Mature male sex cell

1. Ovum
2. Semen
3. Spermatozoa
4. Testosterone

_____d. Head of penis

1. Base
2. Foreskin
3. Glans penis
4. Prepuce

_____e. Surgical removal of the prepuce

1. Circumcision
2. Prepucectomy
3. Semenectomy
4. Vasectomy

TEST

______f. Thick, sticky

1. Copious
2. Mucoid
3. Oppressive
4. Viscid

______g. External pouch that contains the testes

1. Epididymis
2. Scrotum
3. Seminal vesicle
4. Vas deferens

______h. Thick, white secretion of the male reproductive glands

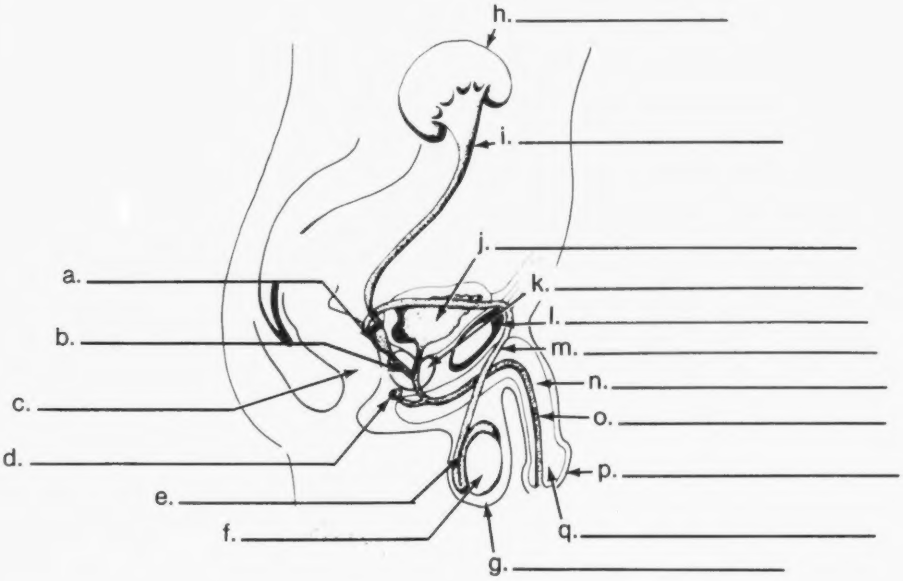
1. Mucoidal
2. Sebum
3. Semen
4. Spermatozoa

6. Identify structures of the male reproductive system. Write the correct names in the blanks.

Seminal vesicle
Epididymis
Testis
Ureter
Prepuce
Prostate gland

Pubic bone
Ejaculatory duct
Scrotum
Urinary bladder
Vas deferens
Rectum

Kidney
Penis
Urethra
Glans penis
Bulbourethral glands



TEST

7. List at least one function for each of the following male reproductive organs.

External

a. Scrotum — ____________________

b. Testes — ____________________

c. Epididymides — ____________________

d. Vas deferens — ____________________

e. Penis and urethra — ____________________

Internal

f. Seminal vesicles — ____________________

g. Prostate gland — ____________________

h. Bulbourethral glands — ____________________

i. Vas deferens — ____________________

8. Select terms associated with the female reproductive system. Write the correct numbers in the blanks.

_____a. Period in life that marks the permanent cessation of menstruation

1. Menarche
2. Menopause
3. Menstruation
4. Old age

_____b. Ducts that convey milk

1. Bartholin's
2. Lactiferous
3. Mammary
4. Skene's

_____c. Fold of peritoneum that supports the uterus

1. Back ligament
2. Broad ligament
3. Strong ligament
4. Wide ligament

_____d. Female sex cell containing 23 chromosomes

1. Ovale
2. Ovum
3. Uterus
4. Vulva

TEST

______e. Mucous membrane lining of the uterus

1. Endometrium
2. Myometrium
3. Parametrium
4. Perineum

______f. Beginning of menstruation

1. Climacteric
2. Menarche
3. Menopause
4. Puberty

______g. Thin-walled cavity in the ovary enclosing a developing ovum

1. Corpus luteum
2. Graafian follicle
3. Hormonal envelope
4. Ovulation

______h. External female genitalia

1. Gonads
2. Perineum
3. Vestibule
4. Vulva

______i. Periodic discharge of a bloody fluid from the uterus

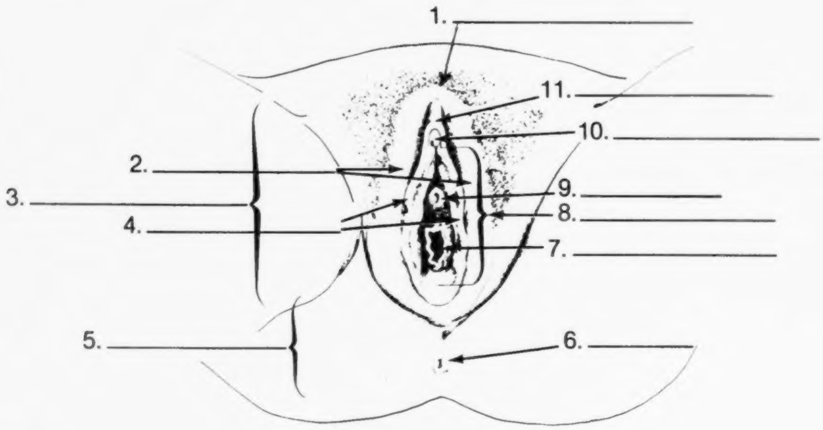
1. Hemorrhage
2. Menarche
3. Menstruation
4. Ovulation

TEST

9. Identify structures of the female reproductive system. Write the correct names in the blanks.

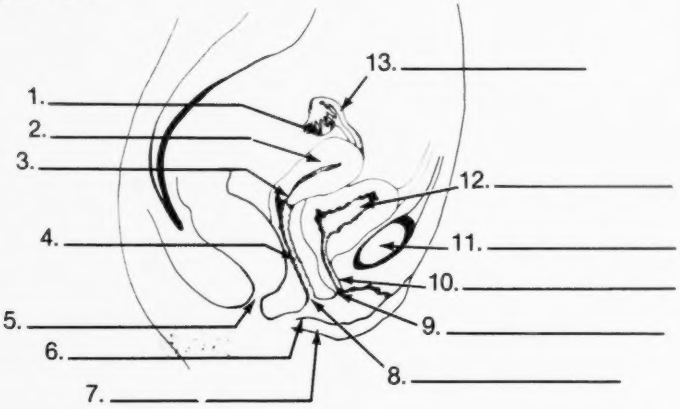
a. External organs and adjacent structures

Labia minora
Vestibule
Anus
Clitoris
Vaginal orifice
Mons pubis
Vulva
Urethra meatus
Prepuce
Perineum
Labia Majora



b. Internal organs and adjacent structures

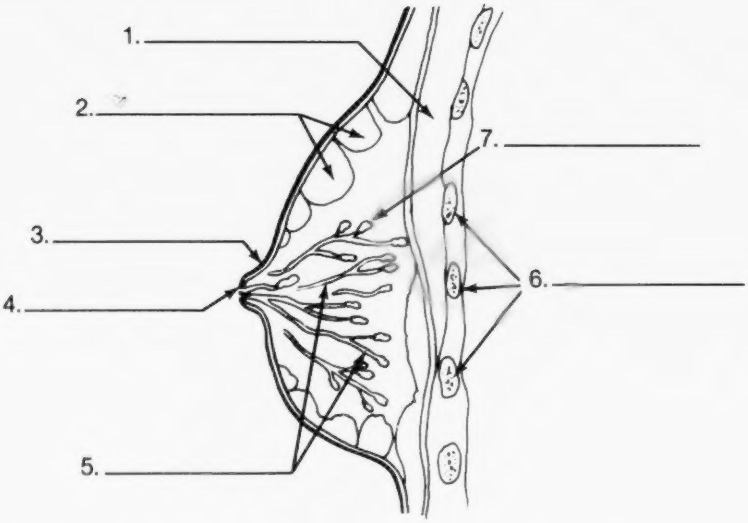
Urinary meatus
Cervix
Fallopian tube
Pubic bone
Vaginal orifice
Labia minora
Urinary bladder
Rectum
Uterus
Urethra
Labia majora
Vagina
Ovary



TEST

c. Breast

Areola
Ribs
Adipose tissue
Pectoralis major
Lobe of gland tissue
Nipple
Lactiferous ducts



10. Match female external and internal reproductive organs to their correct functions. Write the correct numbers in the blanks.

External female organs

______a. Protection of the vestibule

______b. Outlet for menstruation; female organ of intercourse; birth canal

______c. Mass of tissue critical for pelvic support

______d. Lactation (secretion of milk)

______e. Sexual excitation

______f. Protection of labia minora

______g. Regulation of urine flow

______h. Protection of pubic bone

1. Mammary glands (breasts)
2. Mons pubis
3. Labia majora
4. Labia minora
5. Clitoris
6. Urethral orifice
7. Vaginal orifice
8. Perineum

TEST

Internal female organs

______i. Movement of ova from ovaries to uterus; fertilization usually takes place in the distal third of the tube

______j. Secretion of lubricating fluid

______k. Reception of the penis during copulation; passageway for the infant during birth

______l. Production of hormones and an ovum, usually once a month from alternate ovaries

______m. Menstruation; during pregnancy, protection and nourishment of fertilized ovum until it becomes a viable infant

9. Vagina
10. Uterus
11. Fallopian tubes (two)
12. Ovaries (two)
13. Bartholin's and Skene's glands

11. Match stages of the 28-day menstrual cycle to their correct descriptions. Write the correct numbers in the blanks.

______a. During this period of ovum maturation, the Graafian follicle produces estrogen under the control of the pituitary gland, and the endometrium repairs and begins to thicken

______b. Hormone production decreases; endometrium shrinks

______c. Ovulation occurs; Graffian follicle ruptures, and ovum is released into the abdominal cavity; fringed end of fallopian tube brings ovum into tube where it is propelled to uterus

______d. Usually menstruation occurs, and one of the many ova enclosed in a Graafian follicle begins to mature

______e. Corpus luteum forms, secreting progesterone; endometrium thickens

1. Days 1-5
2. Days 5-13
3. By day 14
4. Days 15-20
5. Days 21-28

12. Describe physiological changes that occur during menopause.

a. ______________________________

____

b. ______________________________

____

c. ______________________________

____

TEST

13. Describe the education and duties of one health occupation related to the reproductive system.

____

____

____

____

____

REPRODUCTIVE SYSTEM
UNIT VIII

ANSWERS TO TEST

1. a. 4
   b. 1
   c. 4
   d. 3
   e. 2
   f. 3
   g. 4
   h. 3

2. a. Perpetuation of the human species
   b. Sexual gratification
   c. Secretion of hormones

3. a. Third
   b. Do
   c. Do
   d. Spermatozoa
   e. 45

4. a. Answer should include any two of the following

   1) Increase in size of larynx, causing a lower-pitched voice
   2) Rapid growth of external genitalia
   3) Growth of hair on face, pubis, axilla, and other parts of the body
   4) Development of firmer musculature, broad shoulders, narrow hips

   b. Answer should include any two of the following

   1) Breast development
   2) Broadening of the hips
   3) Growth of hair on pubis and axilla
   4) Onset of menstruation

5. a. 4
   b. 3
   c. 3
   d. 3
   e. 1
   f. 4
   g. 2
   h. 3

6. a. Seminal vesicle
   b. Ejaculatory duct
   c. Rectum
   d. Bulbourethral glands
   e. Epididymis
   f. Testis
   g. Scrotum
   h. Kidney
   i. Ureter
   j. Urinary bladder
   k. Prostate gland
   l. Pubic bone
   m. Vas deferens
   n. Penis
   o. Urethra
   p. Prepuce
   q. Glans penis

ANSWERS TO TEST

7. a. Protects testes; regulates and maintains favorable temperature for sperm production
   b. Produce sperm and testosterone
   c. Collect and store sperm while maturing; conduct sperm to outside
   d. Transports sperm from the testes to the urethra
   e. Carry semen into vagina during copulation; carry urine from bladder
   f. Contribute essential components to semen
   g. Secretes alkaline fluids that enhance sperm mobility; contracts smooth muscles to aid in ejaculation
   h. Secrete viscid alkaline fluid that removes urine residue; secrete mucus for lubrication
   i. Transports sperm from the testes to the urethra

8. a. 2
   b. 2
   c. 2
   d. 2
   e. 1
   f. 2
   g. 2
   h. 4
   i. 3

9. a. 1. Mons pubis
      2. Labia majora
      3. Vulva
      4. Labia minora
      5. Perineum
      6. Anus
      7. Vaginal orifice
      8. Vestibule
      9. Urethra meatus
      10. Clitoris
      11. Prepuce

   b. 1. Ovary
      2. Uterus
      3. Cervix
      4. Vagina
      5. Rectum
      6. Labia minora
      7. Labia majora
      8. Vaginal orifice
      9. Urinary meatus
      10. Urethra
      11. Pubic bone
      12. Urinary bladder
      13. Fallopian tube

   c. 1. Pectoralis major
      2. Adipose tissue
      3. Areola
      4. Nipple
      5. Lactiferous ducts

ANSWERS TO TEST

6. Ribs
7. Lobe of gland tissue

10. External female organs

a. 4
b. 7
c. 8
d. 1
e. 5
f. 3
g. 6
h. 2

Internal female organs

i. 11
j. 13
k. 9
l. 12
m. 10

11. a. 2
b. 5
c. 3
d. 1
e. 4

12. a. Production of estrogen diminishes
b. Ovaries atrophy and become scar tissue because of lack of hormonal support
c. Uterus, fallopian tubes, vagina, and vulva atrophy because of lack of estrogen

13. Description evaluated to the satisfaction of the instructor

URINARY SYSTEM
UNIT IX

SUGGESTED ACTIVITIES

I. Unit contents

   A. Objective sheet

   B. Suggested activities

   C. Supplements

      1. Supplement #1 — Urinary System Crossword Puzzle

      2. Supplement #2 — Common Diseases and Disorders of the Urinary System

   D. Transparency masters

      1. TM #1 — Male Urinary System (with Blood Vessels)

      2. TM #2 — Female Urinary System

      3. TM #3 — Vertical Cross-Section of a Kidney

      4. TM #4 — A Simplified Nephron

   E. Information sheet

   F. Assignment Sheet #1 — Complete Statements Concerning the Urinary System

   G. Answers to assignment sheets

   H. Test

   I. Answers to test

II. Instructors guide

   A. Review unit and plan presentation.

   B. Order materials to supplement unit.

      1. Film — *Kidneys*, 22 minutes, 1972. Available from Films, Inc., 733 Green Bay Road, Wilmette, Illinois 60091. Concise and detailed animation clearly defines the complex inner structures and functions of the kidneys. Filmed segments emphasize the relationship of healthy kidneys to the well-being of the body.

         (NOTE: This film is available on a free-loan basis to Oklahoma instructors. Oklahoma teachers may order from the State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, Film Library, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364. Out-of-state teachers must order from the address listed with the film.)

SUGGESTED ACTIVITIES

2. Transparencies and competency profiles

   (NOTE: Transparencies and competency profiles for this manual are available from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

C. Introduce unit.

- Explain that as well as in urinary disorders and diseases, the urinary system plays a part in many other illnesses.

  EXAMPLES: Fever—dehydration, congestive cardiac failure—edema

- Discuss the importance of fluid and electrolyte balance.
- Explain that in a healthy individual the intake should be about the same as the output over a 24-hour period.
- Discuss that normal functioning of the urinary system is necessary for survival.

D. Discuss unit and specific objectives.

E. Discuss information sheet and assignment sheet.

1. Use Information Sheet, Section I, to discuss terms and definitions related to the urinary system.
   - Stress that no matter what area in the health field the student is interested in, it will involve the urinary system to some degree.
   - Relate the terms and definitions to the terminology learned in Observation and Documentation, Section C, Unit II.
2. Use Information Sheet, Section II, to discuss the functions of the urinary system.
   - Discuss that if the urinary system does not filter the blood, the toxins will build up in the blood, causing uremic poisoning.
   - Relate health-related terminology to the urinary system.

     EXAMPLES: Anuria, nocturia, oliguria, polyuria

   - Briefly review the importance of water and electrolyte balance.
   - Discuss that there is an association between renal functioning and blood pressure.

SUGGESTED ACTIVITIES

3. Use Information Sheet, Sections III-VIII to discuss the organs of the urinary system.

   - Refer to Transparencies #1 and #2 to point out the locations of organs of the urinary system in the male and female.
   - Point out that the kidneys are not protected by bone, but have a thick layer of fat for protection sometimes called *epinephric fat*.
   - Have the students look at kidneys in the grocery store, and they will see a portion of this fat.
   - Discuss injuries to the kidneys in contact sports, also mention hematuria.
   - Discuss kidney transplantation. Explain that no kidneys are incompatible with life. Mention donor compatibility and organ rejection.
   - Discuss renal dialysis; explain that the machine filters the blood when the kidneys cannot.
   - Discuss the process of selective reabsorption.
   - Use Transparency #3 to point out the principal parts of a kidney and nephron.
   - Use Transparency #4 to show an enlarged nephron.
   - Explain that clients are catheterized prior to abdominal surgery due to the possibility of accidental injury if the bladder is distended.
   - Explain the terms *retention, frequency,* and *catheterization*.
   - Show film *kidneys*.

4. Use Information Sheet, Sections IX-XI, to discuss urine.

   - If possible, test a urine sample for specific gravity.
   - Arrange for a visit to your local laboratory to observe urine testing.
   - Relate urine output to disease conditions.

     EXAMPLE: If a fever is present, output may be diminished.

   - Discuss urinary symptoms with a urinary infection, dysuria, frequency, urgency, etc.
   - If a large segment of your students is interested in nursing, discuss the types and purposes of catheters.
   - Have the students complete Supplement #1, the crossword puzzle, and the assignment sheet to reinforce information in the unit.

SUGGESTED ACTIVITIES

5. Use Information Sheet, Section XII, to discuss occupations related to the urinary system.

   - Invite a representative from a related occupation as a guest speaker.
   - Discuss organ donations and transportation of organs. Point out the organ-donation section on the back of a driver's license.
   - Give students Supplement #2, Diseases and Disorders of the Urinary System. Explain that the word *ectopic* means "being in an abnormal position" or "out of place." Point out the occupations that might be involved in treatment of these diseases or disorders.
   - Point out that dialysis technician is a subcareer area of health occupations related to the urinary system.

F. Give unit test.

G. Critique test and discuss with class.

H. Reteach and retest if necessary.

I. Complete appropriate section of students' competency profiles.

III. Unit references

A. Anthony, Catherine, and Gary A. Thibodeau. *Structure & Function of the Body*, 7th ed. St. Louis: Times Mirror/Mosby College Publishing, 1984.

B. Boyles, Marcia V., Margaret K. Morgan, and Mary H. McCaulley. *The Health Professions*. Philadelphia: W.B. Saunders Company, 1982.

C. Kellum, Mary. *Anatomy and Physiology*. Stillwater, Oklahoma: Mid-America Vocational Consortium, Inc., 1984.

D. Rogers, Helen V. and Ann Benson. *Practical Nursing: Volume I*, rev. by Jamee Reid Sloan. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1981.

E. Sloan, Jamee Reid. *Health Service Careers*. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1979.

URINARY SYSTEM
UNIT IX

SUPPLEMENT #1 — URINARY SYSTEM CROSSWORD PUZZLE

Test your recall of terms associated with the urinary system. Use the clues given below to work the crossword puzzle on the next page.

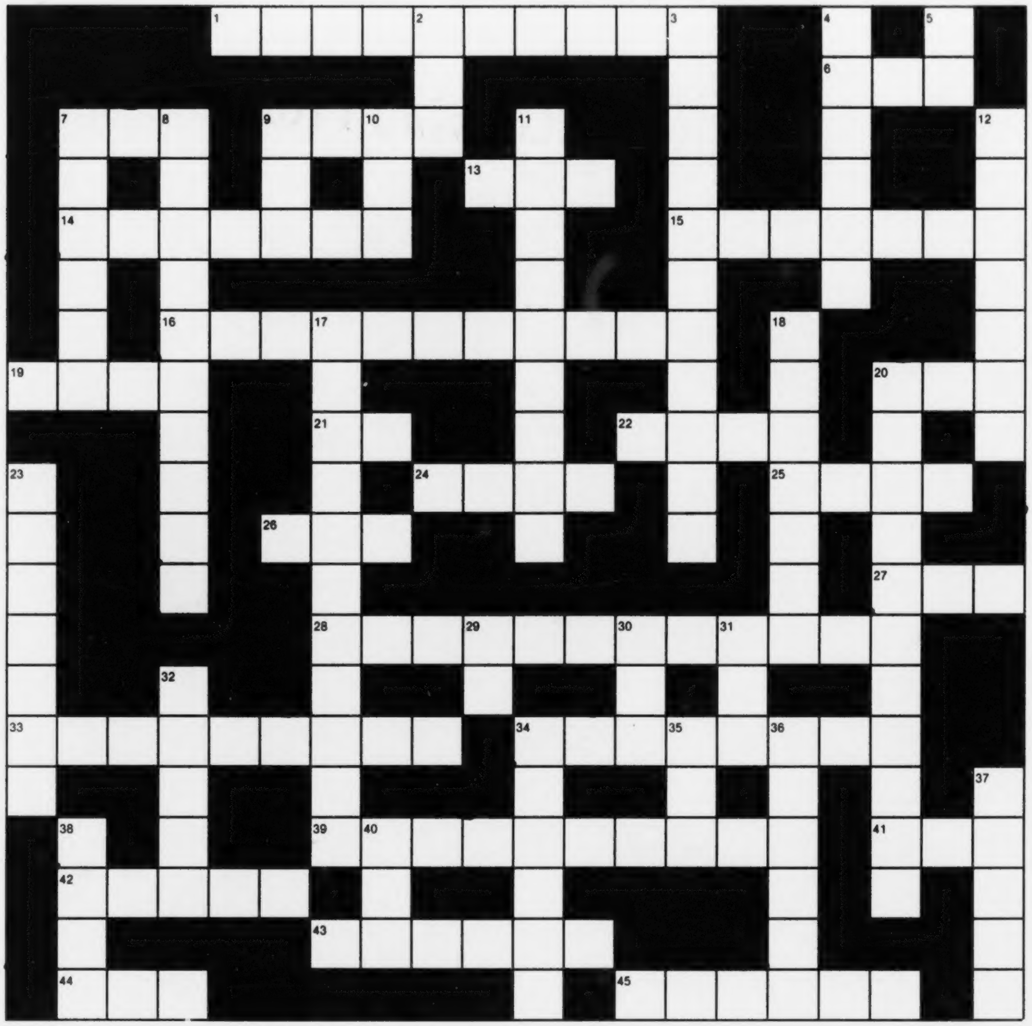
ACROSS CLUES

1. Term for sugar in the urine
6. Prefix meaning *upon*
7. Source of bacon and skin grafts
9. Prefix meaning *inside*
13. Prefix meaning *new*
14. Branch of medicine concerning the urinary tract
15. Inner portion of the kidney where the nephron tubes come together in the collecting tubules
16. Discharge of indigestible materials and waste products of metabolism from the body
19. Skin appendage
20. Observe
21. Chemical term for *chloride*
22. Preparation (abbr)
24. Urinate
25. Prefix for *under, below*
26. Prefix for *under*
27. Color of erythema
28. Involuntary urination
33. Inability to empty the bladder completely
34. An abnormal concentration usually composed of mineral salts
39. Science dealing with structure and function of the kidney
41. Latin for *mouth*
42. Cuplike division of the renal pelvis
43. Tube for carrying urine from the kidney to the bladder
44. Prefix that means *difficult* or *painful*
45. Organ that secretes urine

DOWN CLUES

2. Prefix meaning *ear*
3. Albumin in the urine
4. In the female the urinary ____________ is located in the vestibule
5. Prefix for *two*
7. Pus in urine
8. Cluster of capillaries that filters blood as it comes from the renal arteries
9. Self
10. 24 hours
11. Blood in urine
12. Reservoir for urine
17. Urination
18. Basic functional unit of kidney
20. Inability to void because the kidneys are not secreting any urine and the bladder is empty
23. Passageway from bladder to urinary meatus
29. Term for *orifice*
30. Unwell
31. Flightless bird
32. Pertaining to the kidney
34. Smooth, solid portion of the kidney where the greater part of the nephron is located
35. Dove's sound
36. Not professional person
37. H_2O
38. Not neutral or alkali
40. Organ of hearing

SUPPLEMENT #1



SUPPLEMENT #1

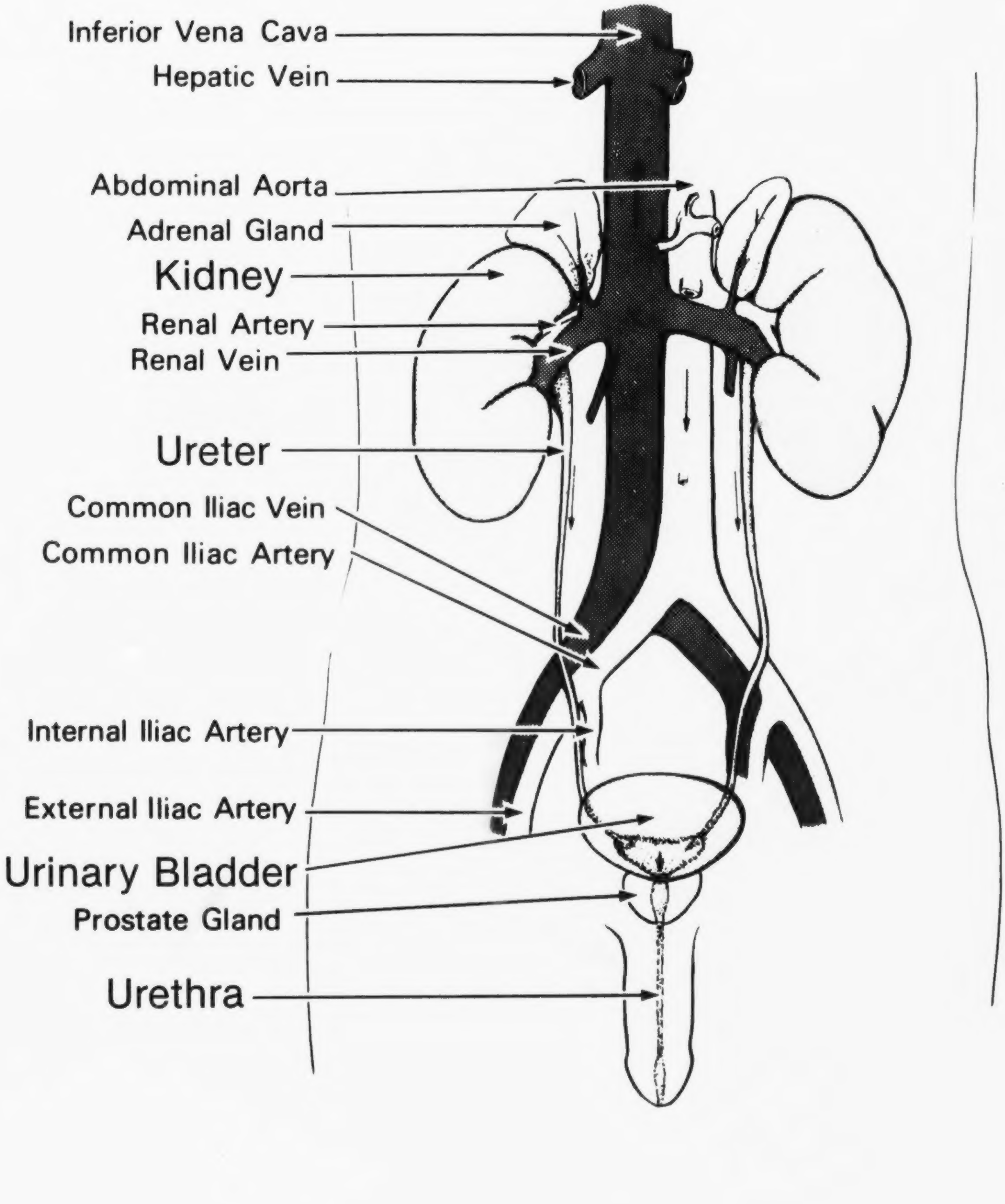
				1 G	L	Y	C	2 O	S	U	R	I	3 A			4 M		5 B	
								T					L			6 E	P	I	
	7 P	I	8 G		9 E	N	10 D	O		11 H			B			A			12 B
	Y		L		G		A		13 N	E	O		U			T			L
	14 U	R	O	L	O	G	Y			M			15 M	E	D	U	L	L	A
	R		M							A			I			S			D
	I		16 E	L	I	17 M	I	N	A	T	I	O	N		18 N				D
19 H	A	I	R			I				U			U		E		20 S	E	E
			U			21 C	L			R		22 P	R	E	P		U		R
23 U			L			T		24 V	O	I	D		I		25 H	Y	P	O	
R			U		26 S	U	B			A			A		R		P		
E			S			R									O		27 R	E	D
T						28 I	N	C	29 O	N	T	30 I	N	31 E	N	C	E		
H			32 R			T			S			L		M			S		
33 R	E	T	E	N	T	I	O	N		34 C	A	L	35 C	U	36 L	U	S		
A			N			O				O			O		A		I		37 W
	38 A		A			39 N	40 E	P	H	R	O	L	O	G	Y		41 O	R	A
	42 C	A	L	Y	X		A			T					M		N		T
	I					43 U	R	E	T	E	R				A				E
	44 D	Y	S							X		45 K	I	D	N	E	Y		R

URINARY SYSTEM
UNIT IX

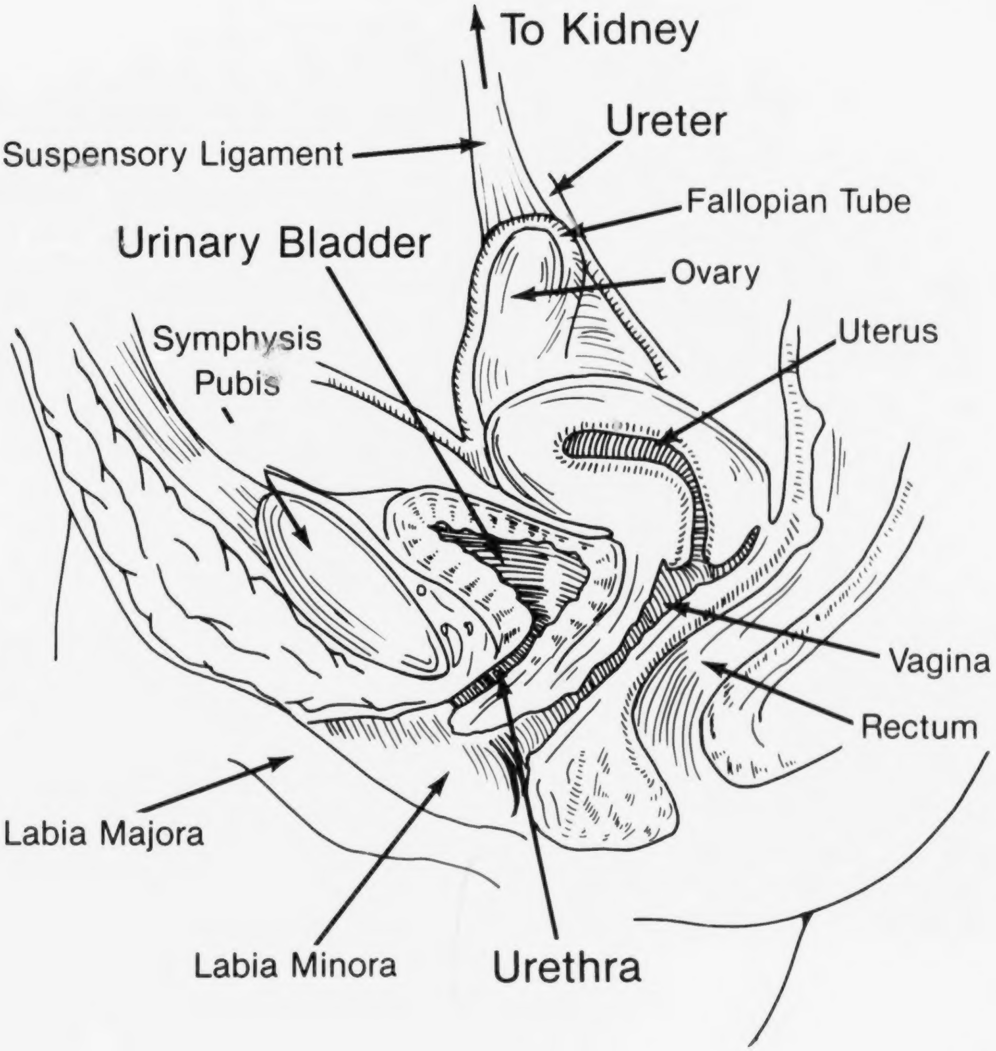
SUPPLEMENT #2 — COMMON DISEASES AND DISORDERS OF THE URINARY SYSTEM

Type	Disease	Description
Congenital	Agenesis of kidney	Absence of kidney
	Ectopic kidney	Kidney in an abnormal place
	Ectopic ureter	Ureter in an abnormal place
Degenerative	Hydronephrosis	Distention of the renal pelvis
	Uremia	Renal failure
Familial	Polycystic kidney	Massive enlargement of the kidney with the formation of many cysts
Infectious	Glomerulonephritis	Inflammation of the glomeruli of the kidney. Can be acute, subacute or chronic. Usually secondary to a hemolytic streptococcus infection
	Pyelonephritis	Inflammation of the kidney and the renal pelvis
	Cystitis	Inflammation of the urinary bladder
	Urethritis	Inflammation of the urethra
Metabolic	Urolithiasis	Formation of urinary calculi
Neoplastic	Adenoma of kidney	Benign epithelial tumor
	Carcinoma of ureter	Malignant tumor of ureter
	Carcinoma of bladder	Malignant tumor of bladder
Psychiatric	Enuresis	Involuntary discharge of urine, due to psychological factors

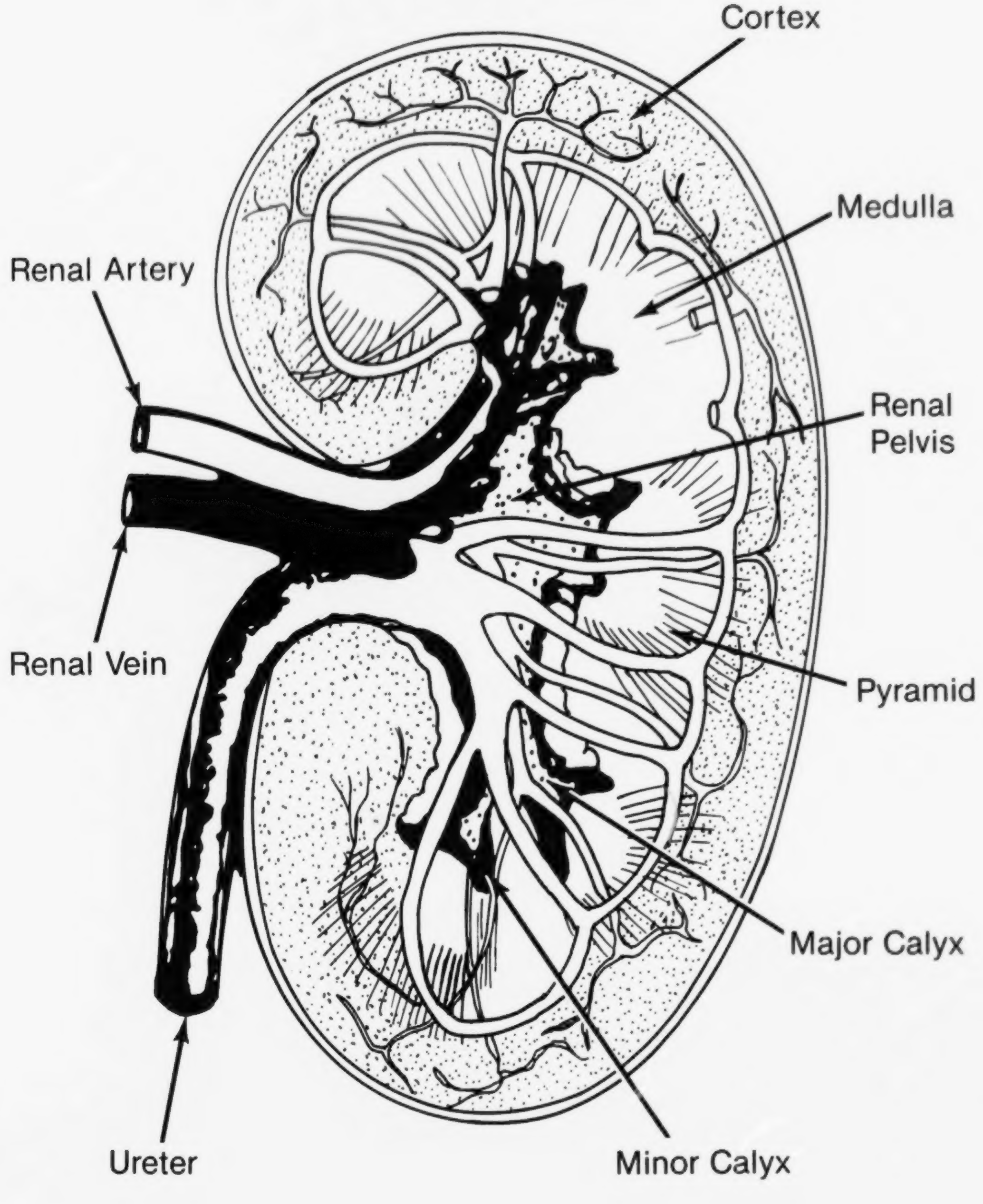
Male Urinary System
(With Blood Vessels)



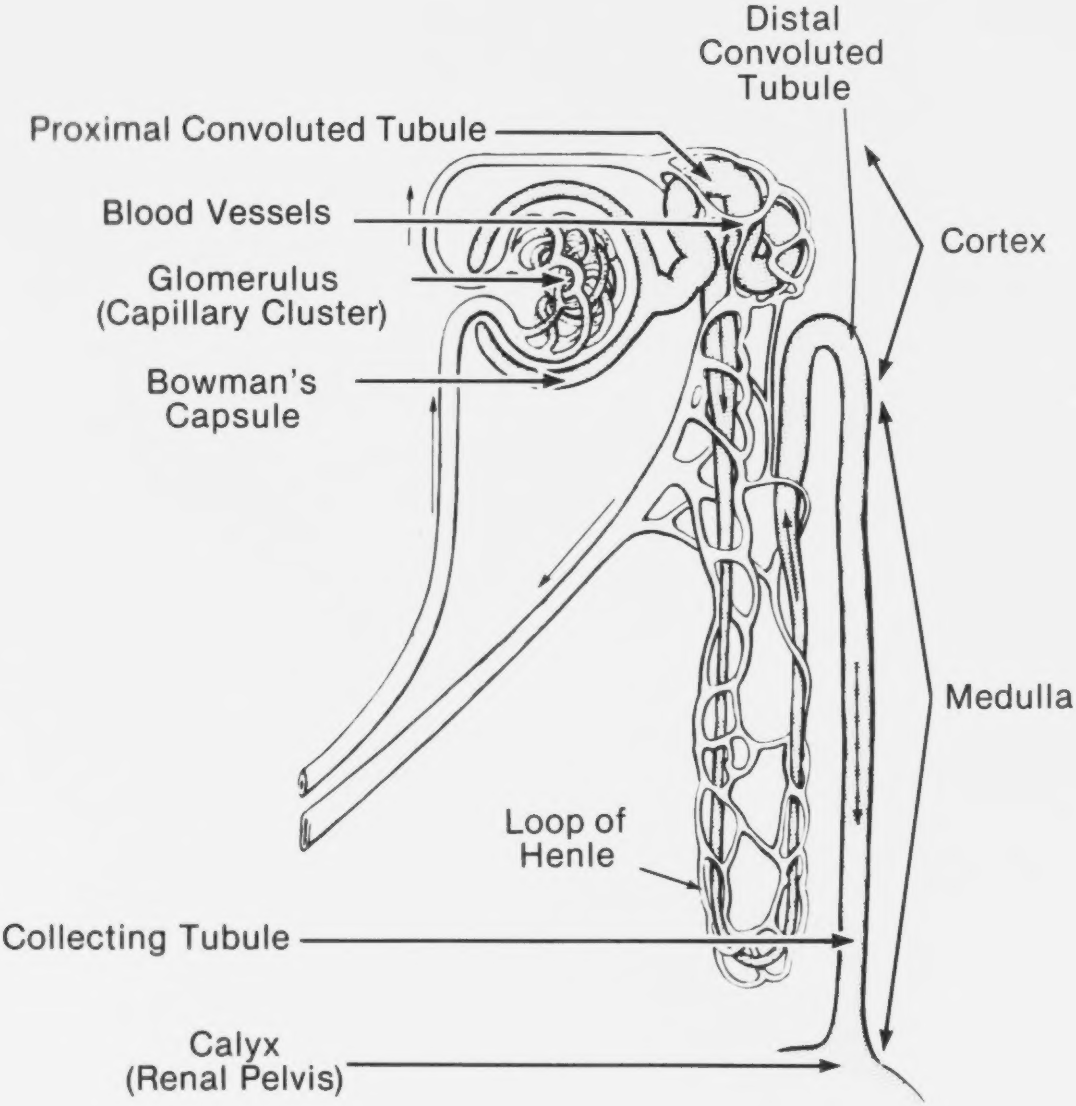
Female Urinary System



Vertical Cross-Section of a Kidney



A Simplified Nephron



URINARY SYSTEM
UNIT IX

ANSWERS TO ASSIGNMENT SHEET

Assignment Sheet #1

A. 3
B. 1
C. 2
D. 4
E. 2
F. 4
G. 4
H. 3
I. 3
J. 2
K. 3
L. 4
M. 2
N. 1
O. 1
P. 1
Q. 2
R. 2
S. 2
T. 4
U. 2
V. 2
W. 4
X. 1
Y. 3

URINARY SYSTEM
UNIT IX

TEST

NAME ______________________________ SCORE ______________

1. Match to their correct definitions terms associated with the urinary system. Write the correct numbers in the blanks.

______a. External opening of the urethra

______b. To urinate or void

______c. Involuntary urination

______d. Abnormal concentration usually composed of mineral salts; commonly called a stone

______e. Basic functional unit of the kidney

______f. Pertaining to the kidney

______g. Inability to empty bladder completely

______h. Science dealing with structure and function of the kidney

______i. Discharge of indigestible materials and waste products of metabolism from the body

______j. Tube that carries urine from the kidney to the bladder

______k. Branch of medicine concerning the urinary tract in both sexes and the genital tract of the male

______l. Tube for carrying urine from the bladder to the outside of the body

______m. Inability to void because kidneys are not secreting any urine and bladder is empty

1. Urology
2. Renal
3. Nephrology
4. Suppression of urine
5. Ureter
6. Retention of urine
7. Urinary meatus
8. Elimination
9. Urethra
10. Nephron
11. Calculus
12. Micturition
13. Incontinence

TEST

2. Complete the following statements concerning the functions of the urinary system.

   a. The urinary system filters the ________________ by removing various toxins, metabolic waste products, and some water

   b. The urinary system manufactures and excretes ________________

   c. The urinary system assists in regulation of water, ________________ , and acid-base balance of the body

   d. The urinary system influences blood ________________

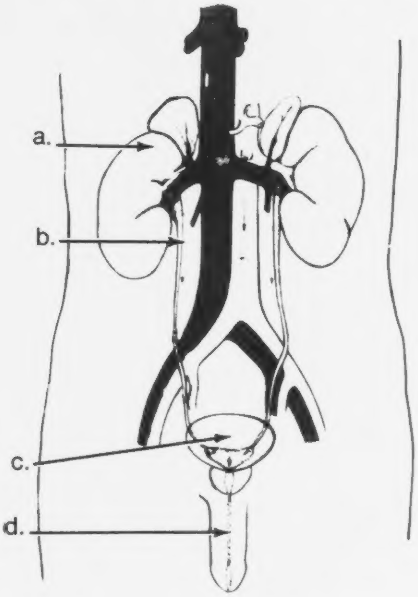
3. Label the organs of the urinary system. Write the correct names in the blanks.

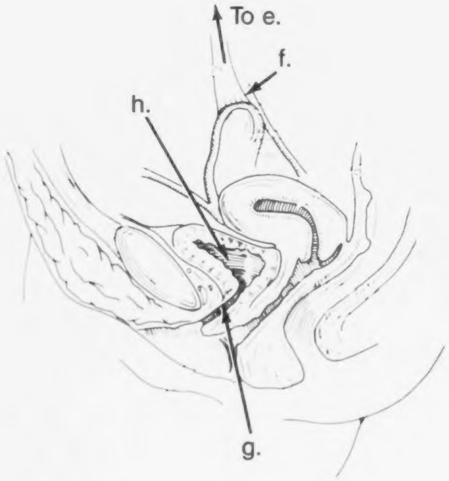
   a. ______________________________ e. ______________________________

   b. ______________________________ f. ______________________________

   c. ______________________________ g. ______________________________

   d. ______________________________ h. ______________________________





TEST

4. Describe the location and structure of the kidneys.

   a. Location — ____

   ____

   ____

   ____

   b. Structure — ____

   ____

   ____

   ____

5. Name four functions of the kidneys.

   a. ____

   b. ____

   c. ____

   d. ____

6. Match principal parts of the kidney and nephron to the correct descriptions. Write the correct numbers in the blanks.

______a. Funnel-shaped structure partially enclosing the glomerulus that receives waste, water, glucose, and salts from the thin capillaries

______b. Inner portion of the kidney where the nephron tubes come together in the collecting tubules

______c. Bell-shaped cup in the renal pelvis

______d. Cluster of capillaries that filters blood as it comes from the renal arteries

______e. Smooth, solid portion of the kidney where the greater part of the nephron is located

______f. Collects the remaining mixture of waste products and water (urine) that has passed through the convoluted tubule

______g. Area where the upper ureter expands to form a basin that receives urine from the collecting tubules

______h. Long, twisted tube that carries most of the water and salts and all glucose to be reabsorbed by bloodstream

1. Cortex
2. Medulla
3. Calyx
4. Glomerulus
5. Bowman's capsule
6. Convoluted tubule
7. Collecting tubule
8. Renal basin or pelvis

TEST

7. Distinguish between structure and functions of the ureter and the bladder. Write a "U" in the blanks before ureter and a "B" in the blanks before bladder.

______a. Receives and holds urine

______b. Is capable of holding a liter or more of urine in the adult

______c. Consists of narrow tubes approximately $^{1}/_{8}$ inch (4-5 mm) in diameter and 10-12 inches (25-30 cm) in length; is attached to the kidney at the renal pelvis and empties into the urinary bladder

______d. Is thick and folded when empty, but begins to stretch out as it fills and the wall becomes thinner

______e. Retains urine until contracted sphincter relaxes

______f. Moves urine from kidneys to bladder by rhythmic contractions of the muscle wall, similar to peristalsis in the digestive system

______g. Is composed of many layers, including an inner mucous membrane lining, muscle layers, and connective tissue, and is partially covered with the peritoneum

8. Distinguish between the characteristics and functions of the male and female urethra. Write an "X" in the blanks before those associated with the female urethra.

______a. Is divided into three divisions — prostatic, membranous, and cavernous

______b. Acts as a passageway for urine and seminal fluid

______c. Is a short, straight tube

______d. Is a modified S-shaped tube

______e. Contains opening to Skene's glands, which open into the urethra at its termination to secrete lubricating fluid

______f. Is about 8 to 10 inches (20-25 cm) in length

______g. Is about 1 $^{1}/_{2}$ inches (3 cm) long and $^{1}/_{4}$ inch (6 mm) in diameter

______h. Contains an internal and an external sphincter

______i. Passes through the center of the prostate gland, then through two sheets of white, fibrous tissue connecting the pubic bones, and then through the penis

______j. Lies behind the symphysis pubis

______k. Acts as a passageway for urine from the bladder to the urinary meatus

______l. Is embedded in the anterior wall of the vagina

TEST

9. Complete the following statements concerning the physical characteristics of urine. Circle the words that best complete the statements.

    a. Urine is a (mucosal, watery) solution of the waste products of metabolism.

    b. (Cloudy, clear) liquid may be amber or straw-colored.

    c. Slightly (alkaline, acidic) pH ranges from 5.5 to 6.5.

    d. Normal specific gravity is 1.015 to 1.025, which is a little heavier than (blood, water).

    e. Quantity excreted is dependent upon amount of water lost by evaporation through respiratory and cutaneous surfaces and upon (amount of food eaten, amount of fluid taken in).

    f. Average quantity excreted in 24 hours is (400 cc, 1000 cc) to 1800 cc.

    g. Characteristic odor of urine left standing for a short period of time is like that of (apples, ammonia).

10. Distinguish between normal and abnormal constituents of urine by writing an "X" in the blanks before normal constituents.

______a. Acetone
______b. Sodium chloride
______c. Hormones
______d. Uric acid
______e. Pus cells
______f. Water
______g. Blood
______h. Albumin
______i. Urea
______j. Glucose
______k. Calcium
______l. Ammonia
______m. Potassium
______n. Sulfates and phosphates
______o. Creatinine
______p. Magnesium

11. Complete the following statements concerning the process of expelling urine. Circle the words that best complete the statements.

    a. For the average individual when there is (200, 750) cc of urine in the bladder, the pressure on the bladder walls creates an impulse to urinate

    b. In the (infant, adult) the act of voiding, although dependent on involuntary reflexes, is partly under voluntary control

    c. Urination is accomplished by (relaxation, contraction) of the bladder walls, and (relaxation, contraction) of the sphincter muscles at the junction of the urinary bladder and the urethra

TEST

12. Describe the education and duties of one health occupation related to the urinary system.

URINARY SYSTEM
UNIT IX

ANSWERS TO TEST

1. a. 7
   b. 12
   c. 13
   d. 11
   e. 10
   f. 2
   g. 6
   h. 3
   i. 8
   j. 5
   k. 1
   l. 9
   m. 4

2. a. Blood
   b. Urine
   c. Electrolyte
   d. Pressure

3. a. Kidney
   b. Ureter
   c. Urinary bladder
   d. Urethra
   e. Kidney
   f. Ureter
   g. Urethra
   h. Urinary bladder

4. a. Kidneys lie on both sides of vertebral column near level of twelfth vertebrae
   Blood vessels and nerves enter kidney at hilum
   Ureter leaves kidney at hilum

   b. Shape of kidney is like that of a lima bean
   Kidneys are embedded in fatty tissue, which is surrounded by a fibrous tissue called renal fascia
   Left kidney is slightly larger than right
   Right kidney is a little lower than left due to space occupied by liver

5. Answer should include any four of the following

   a. Secrete (manufacture) urine
   b. Excrete urine
   c. Influence blood pressure
   d. Regulate fluid content of blood by separating constituents of urine from the blood
   e. Regulate concentration of various salts circulating in the blood
   f. Extract from the body any foreign substances such as toxins, whether formed in the body or taken into the body from outside
   g. Regulate osmotic pressure of extracellular fluid
   h. Regulate electrolyte and acid-base balance

ANSWERS TO TEST

6. a. 5
   b. 2
   c. 3
   d. 4
   e. 1
   f. 7
   g. 8
   h. 6

7. a. B
   b. B
   c. U
   d. B
   e. B
   f. U
   g. B

8. c, e, g, h, j, k, l

9. a. Watery
   b. Clear
   c. Acidic
   d. Water
   e. Amount of fluid taken in
   f. 1000 cc
   g. Ammonia

10. b, c, d, f, i, k, l, m, n, o, p

11. a. 200
    b. Adult
    c. Contraction, relaxation

12. Evaluated to the satisfaction of the instructor

ENDOCRINE SYSTEM
UNIT X

SUGGESTED ACTIVITIES

I. Unit contents

   A. Objective sheet

   B. Suggested activities

   C. Supplements

      1. Supplement #1 — Crossword Puzzle

      2. Supplement #2 — Common Diseases and Disorders of the Endocrine System

   D. Transparency masters

      1. TM #1 — Endocrine System

      2. TM #2 — Anterior Lobe of Pituitary Gland

   E. Information sheet

   F. Assignment sheets

      1 Assignment Sheet #1 — Label Endocrine Glands

      2. Assignment Sheet #2 — Complete Statements Concerning the Endocrine System

   G. Answers to assignment sheets

   H. Test

   I. Answers to test

II. Instructor's guide

   A. Review unit and plan presentation.

   B. Order materials to supplement unit.

      1. Computer software — *The Body in Focus*. CBS software available for Apple II, IBM, and Commodore. This self-paced exploration into human anatomy improves understanding of systems and organs and is a very good overview of the human body. Body close-ups allow students to explore some parts of the body layer by layer. Systems covered are integumentary, muscular, digestive, nervous, skeletal, respiratory, circulatory, and endocrine.

         (NOTE: This program can be ordered from Teachware, P.O. Box 94365, Oklahoma City, Oklahoma 73143; telephone [405]-794-3748.)

SUGGESTED ACTIVITIES

2. Transparencies and competency profiles

   (NOTE: Transparencies and competency profiles for this manual are available from the Oklahoma State Department of Vocational and Technical Education, Curriculum and Instructional Materials Center, 1500 West Seventh Avenue, Stillwater, Oklahoma 74074-4364.)

C. Introduce unit.

- Discuss how critical the endocrine system is in body functioning, and how many factors rely on this system.
- Discuss some of the common diseases related to the endocrine system.

  EXAMPLE: Diabetes mellitis.
- Explain that this system and the nervous system are the two major control systems of the body.

D. Discuss unit and specific objectives.

E. Discuss information sheet and assignment sheets.

1. Use Information Sheet, Section I, to discuss terms and definitions associated with the endocrine system.
   - Differentiate between endocrine and exocrine glands.
   - Relate the terms *hyposecretion* and *hypersecretion* to health-related terminology; explain the breakdown of the words.
   - Have the students give possible examples of hypersecretion and hyposecretion.
2. Use Information Sheet, Sections II and III, to discuss the function of the endocrine system, and the principal glands and their locations.
   - Explain that although the endocrine system has only one function, it is extremely critical and necessary to sustain life.
   - Use Transparency #1 to point out the location of the principal endocrine glands.
   - Review the reproductive system briefly when discussing gonads.
3. Use Information Sheet, Sections IV and V, to discuss the pituitary gland.
   - Discuss that the pituitary is called the *master gland* because it controls other glands.
   - Show Transparency #2 when discussing the anterior lobe of the pituitary.
   - Point out that as the somatotropic hormone regulates growth, a hyposecretion can cause dwarfism.

SUGGESTED ACTIVITIES

- Explain that oxytocin is given to induce labor.
- Stress the critical function of the pituitary gland.

4. Use Information Sheet, Sections VI and VII, to discuss the thyroid and parathyroid glands.
   - Explain that the absence of a thyroid gland at birth can cause mental retardation.
   - Refere to Transparency #1 for location of the thyroid gland.
   - Discuss goiter, myxedema, and thyrotoxicosis.
   - Review the function of calcium in relation to the parathyroid gland.
5. Use Information Sheet, Sections VIII and IX, to discuss the adrenal glands and the principal hormones secreted by the adrenals.
   - Refer to Transparency #1 for location of the adrenal glands.
   - Explain that a hyposecretion of aldosterone will reduce cardiac output and can throw a client into profound shock.
   - Point out that synthetic cortisol, cortisone, is used as a anti-inflammatory agent.
   - Point out that hormones from the opposite sex will cause a person to develop secondary sex characteristics of that sex. Treatment for certain types of cancer sometimes includes hormones from the opposite sex. The sides effects, such as facial hair on a female and breast development in a male, are frequently very distressing to the individuals receiving treatment.
   - Break terms *adrenal,* and *suprarenal* into word parts. Ask students to recall the meanings of *ad*-, *supra*-, and *renal*.
   - Discuss the "fight or flight" principle. Have the students discuss examples of this principle, such as being chased by a dog.
6. Use Information Sheet, Section X, to discuss the gonads.
   - Review briefly the reproductive system and the menstrual cycle.
   - Discuss menopause, the reduction of hormone secretion, and the physiological problems that accompany it.
   - Review briefly the male reproductive system and the influence of hormones.
7. Use Information Sheet, Section XI, to discuss the islands of Langerhans.
   - Discuss the condition diabetes mellitis.
   - Discuss the mechanism of glucose breakdown in the body.

SUGGESTED ACTIVITIES

- Discuss blood sugar and glycosuria.

8. Use Information Sheet, Section XII, to discuss other structures with endocrine functions.

    - Discuss that *pineal* means "shaped like a pine cone" and that is how the pineal body got its name.
    - Explain that very little is known about the pineal gland.
    - Discuss the role the immune response plays: relate this to bubble babies and AIDS victims.
    - Point out that the thymus reaches maximum development during puberty. Although the thymus plays an immunologic role throughout life, function decreases with age.
    - Point out that every enzyme known to man has been found in the placenta.
    - Discuss the role of the placenta.
    - Relate the placenta to the creams being developed for sale to the public.
    - Review the role of the stomach and intestine wall in the digestive process.

9. Use Information Sheet, Section XIII, to discuss the functions of an endocrinologist.

    - Discuss Supplement #2.

10. Have the students complete Supplement #1 and Assignment Sheets #1 and #2 to reinforce material in this unit.

F. Review material and give test.

G. Critique test and discuss test with class.

H. Reteach and retest if necessary.

I. Complete appropriate section of students' competency profiles.

III. Unit references

A. Boyles, Marcia V., Margaret K. Morgan, and Mary H. McCaulley. *The Health Professionals*. Philadelphia: W.B. Saunders Company, 1982.

B. Kellum, Mary. *Anatomy and Physiology*. Stillwater, Oklahoma: Mid-America Vocational Consortium, Inc., 1984.

C. Rogers, Helen V. and Ann Benson. *Practical Nursing: Volume I*, rev. by Jamee Reid Sloan. Stillwater, Oklahoma: State Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, 1981.

ENDOCRINE SYSTEM
UNIT X

SUPPLEMENT #1 — CROSSWORD PUZZLE

Use the clues below to complete the crossword puzzle on the next page. If you get stuck, review the Information Sheet.

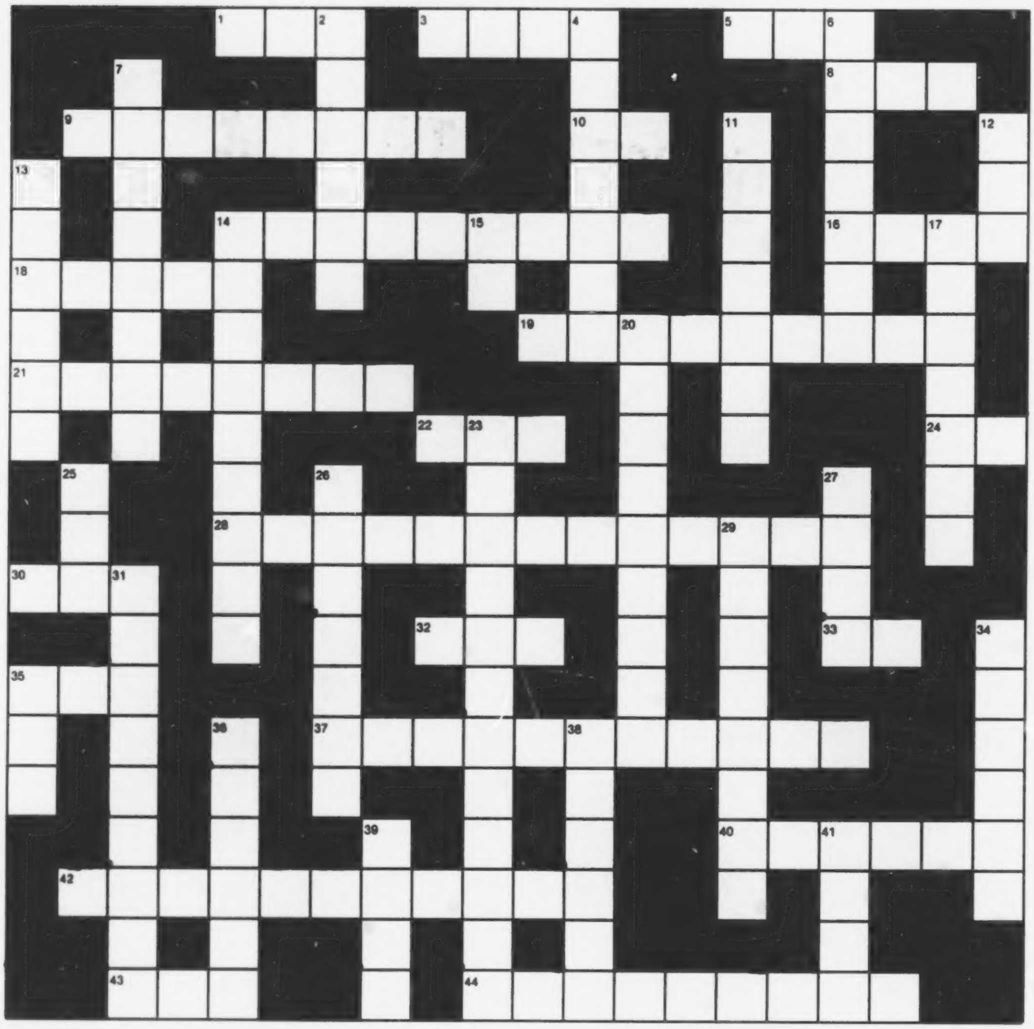
ACROSS

1. Abbreviation for *night*
3. Not enough, as in secretion
5. Vasopression (abbr)
8. Suffix meaning *resembling*
9. Temporary endocrine gland during pregnancy
10. Toward
14. Fight or flight hormone
16. Suffix meaning *condition of*
18. Spot
19. Female sex hormones
21. A gland whose secretion reaches an epithelial surface
22. Prefix meaning *detached*
24. One of the gonadotropic hormones
28. Study of the endocrine system
30. Prefix meaning *head*
32. Gonadotropic hormone
33. Prefix meaning *eye, vision*
35. Meaning of prefix *lipo-*
37. Regulates metabolism of sodium, chloride, and potassium
40. This must be present for thyroxine to be synthesized
42. 4 glands near the thyroid gland
43. Affirmative
44. Ductless gland

DOWN

2. Prefix meaning *against*
4. Female gonads
6. Internal secretion of a gland or an organ that regulates a body function
7. Serves as an antagonist for insulin
11. This gland produces thyroxin
12. Prefix meaning *painful*
13. Male gonads
14. Male sex hormones
15. Away from
17. Produced in the islands of Langerhans
20. Produced by the thyroid gland
23. Secreted by the parathyroid glands
25. Suffix meaning *tumor*
26. This is also called *suprarenal*
27. Prefix meaning *cell*
29. This stimulates the uterus to contract
31. Master gland
34. Outer portion of adrenal gland
35. Gonadotropic hormone
36. Sex organs
38. Bartered
39. Prefix meaning *blue*
41. Daybreak

SUPPLEMENT #1



SUPPLEMENT #1

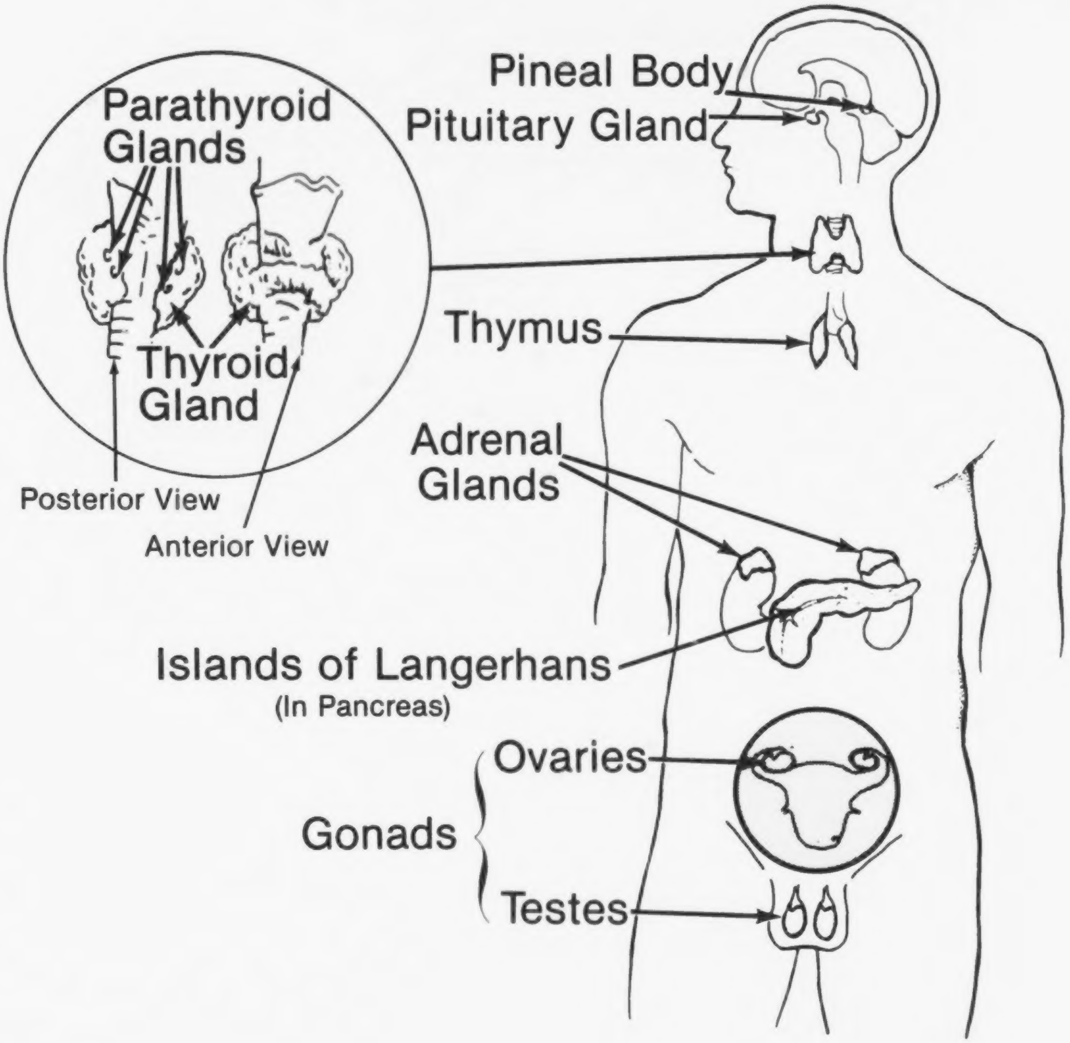
				1 N	O	2 C		3 H	Y	P	4 O			5 A	D	6 H			
		7 G				O					V					8 O	I	D	
	9 P	L	A	C	E	N	T	A			10 A	D		11 T		R			12 D
13 T		U				T					R			H		M			Y
E		C		14 A	D	R	E	N	15 A	L	I	N		Y		16 O	S	17 I	S
18 S	T	A	I	N		A			B		E			R		N		N	
T		G		D						19 E	S	20 T	R	O	G	E	N	S	
21 E	X	O	C	R	I	N	E					H		I				U	
S		N		O				22 A	23 P	O		Y		D				24 L	H
	25 O			G		26 A			A			R				27 C		I	
	M			28 E	N	D	O	C	R	I	N	O	L	29 O	G	Y		N	
30 C	A	31 P		N		R			A			X		X		T			
		I		S		E		32 L	T	H		I		Y		33 O	P		34 C
35 F	A	T				N			H			N		T					O
S		U		36 G		37 A	L	D	O	S	38 T	E	R	O	N	E			R
H		I		O		L			R		R			C					T
		T		N			39 C		M		A			40 I	O	41 D	I	N	E
	42 P	A	R	A	T	H	Y	R	O	I	D			N		A			X
		R		D			A		N		E					W			
		43 Y	E	S			N	44 E	N	D	O	C	R	I	N	E			

ENDOCRINE SYSTEM
UNIT X

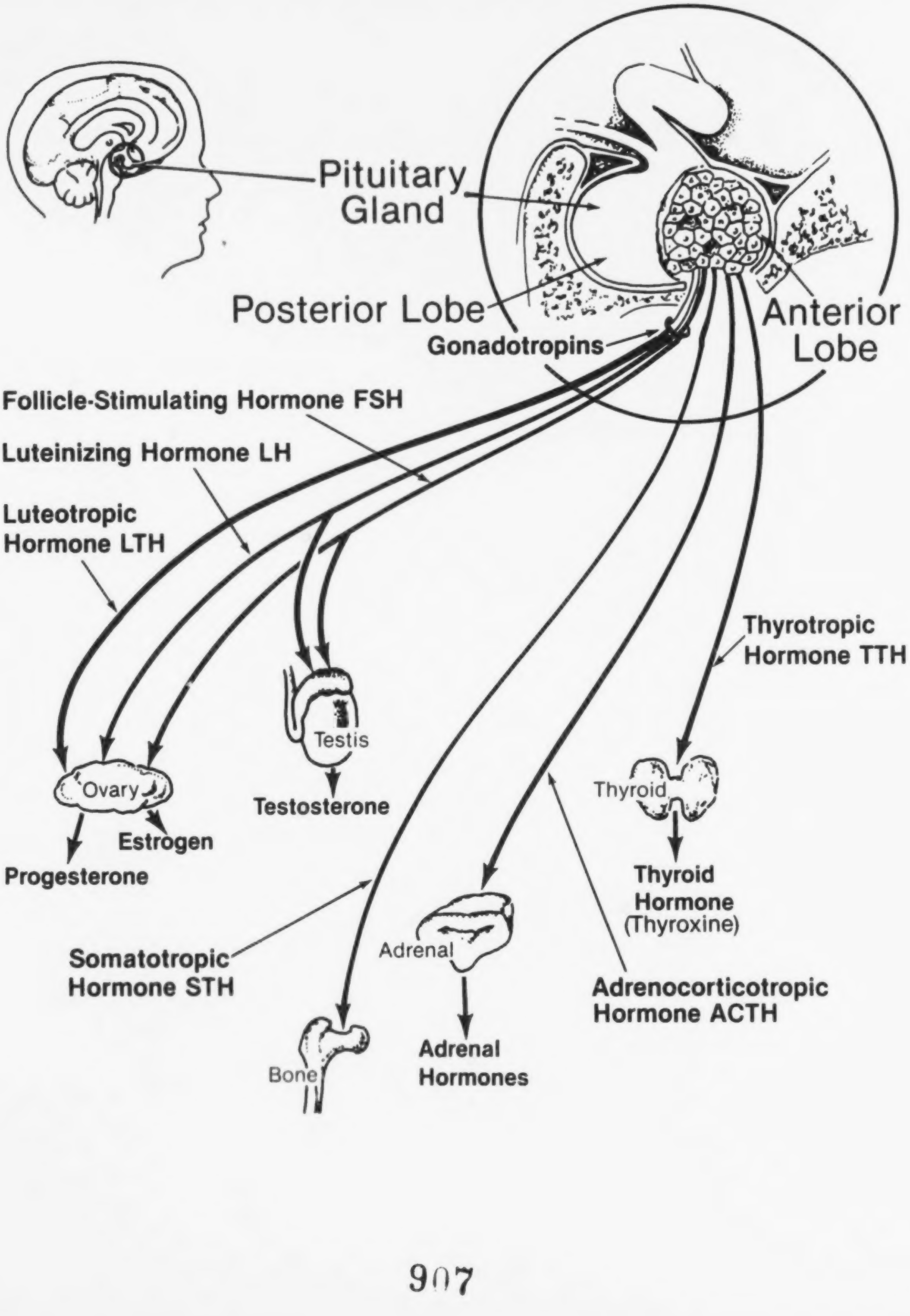
SUPPLEMENT #2 — COMMON DISEASES AND DISORDERS OF THE ENDOCRINE SYSTEM

Type	Disease	Description
Congenital	Cretinism	Hypofunction or absence of the thyroid gland
Metabolic	Acromegaly	Enlarged bones of facial structures and extremities due to excess growth hormone
	Addison's disease	Hyposecretion of hormones from the adrenal cortex
	Cushing's disease	Excess of cortisol from the adrenal cortex
	Diabetes insipidus	Hyposecretion of vasopressin
	Diabetes mellitus	Inability to utilize or manufacture insulin
	Hyperaldosteronism	Hypersecretion of aldosterone
	Myxedema	Hyposecretion of the thyroid gland
	Thyrotoxicosis	Hypersecretion of the thyroid gland
Neoplastic	Carcinoma of thyroid	as stated
	Pancreatic carcinoma	" "
	Pituitary adenoma	" "
Nutritional	Goiter	Enlarged thyroid gland due to lack of iodine

Endocrine System



Anterior Lobe of Pituitary Gland



ENDOCRINE SYSTEM
UNIT X

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

A. Parathyroid glands
B. Thyroid glands
C. Pineal body
D. Pituitary gland
E. Thymus
F. Adrenal glands
G. Islands of Langerhans in pancreas
H. Ovaries
I. Testes

Assignment Sheet #2

A. 2
B. 3
C. 3
D. 4
E. 1
F. 1
G. 4
H. 1
I. 4
J. 4
K. 2
L. 4
M. 4
N. 3
O. 4
P. 4
Q. 3
R. 4

ENDOCRINE SYSTEM
UNIT X

TEST

NAME ________________________________ SCORE ______________

1. Match to their correct definitions terms associated with the endocrine system. Write the correct numbers in the blanks.

______a. Internal secretion of a gland or an organ that regulates a body function

______b. Gland whose secretion reaches an epithelial surface either directly or through a duct

______c. Inadequate secretion

______d. Ductless gland that produces an internal secretion discharged into the blood or lymph and circulated to all parts of the body

______e. Study of the endocrine system

______f. Excessive secretion

______g. Yellow, glandular mass, formed by an ovarian follicle after ovulation, that continues to produce hormones

1. Hormone
2. Endocrine gland
3. Hypersecretion
4. Endocrinology
5. Exocrine gland
6. Hyposecretion
7. Corpus luteum

2. State the function of the endocrine system.

____

____

TEST

3. Label the principal endocrine glands. Write the correct names in the blanks.

a. ______________________

b. ______________________

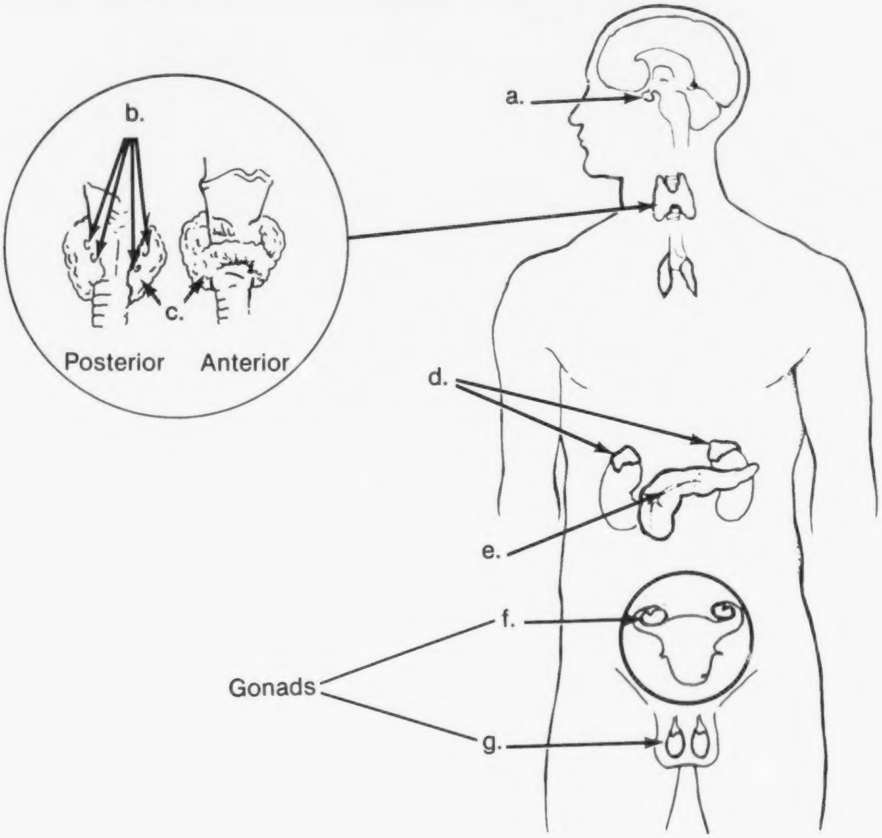
c. ______________________

d. ______________________

e. ______________________

f. ______________________

g. ______________________



TEST

4. Select true statements concerning the pituitary gland. Write an "X" in the blank before each correct answer.

______a. Is also called the thymus

______b. Is a small, gray, rounded body attached to the base of the brain by a stalk and is located behind the eyes

______c. Affects functioning of other endocrine glands

______d. Is divided into anterior and posterior lobes that have separate functions

______e. Posterior lobe secretes four hormones

______f. Anterior lobe secretes several hormones

5. Match hormones of the pituitary gland to their correct functions. Write the correct numbers in the blanks.

______a. Stimulates development of ovarian follicles and formation of sperm in the testes

______b. Induces secretion of estrogens, induces ovulation and development of the corpus luteum

______c. Maintains mature corpora lutea, induces secretion of progesterone, and induces secretion of milk in a fully developed mammary gland

______d. Regulates growth; also referred to as the *human growth hormone*

______e. Induces contraction of smooth muscles of blood vessels,thus affecting blood pressure; is associated with an antidiuretic principle that prevents excessive loss of water through the kidneys; causes reabsorption of water in nephron tubules; also called the *antidiuretic hormone* (ADH)

______f. Regulates functional activity of the adrenal cortex

______g. Regulates functional activity of the thyroid gland

______h. Stimulates the uterus to contract and acts on the mammary gland to stimulate the release of milk

1. Luteinizing hormone (LH)
2. Oxytocin
3. Follicle-stimulating hormone (FSH)
4. Somatotropic hormone
5. Thyrotropic hormone
6. Vasopressin
7. Luteotropic hormone (LTH)
8. Adrenocorticotropic hormone

TEST

6. Complete the following statements concerning the thyroid gland. Circle the words that best complete the statements.

   a. Thyroid is the (smallest, largest) endocrine gland

   b. Gland consists of (two, four) lobes on opposite sides of the trachea and connected in the middle by the isthmus

   c. Thyroid gland secretes the hormone (thyroxine, thyrotropin)

   d. The thyroid hormone is transported in the blood by binding itself to (oxygen, proteins)

   e. (Sodium, Iodine) must be present in sufficient amounts in the body in order for the hormone secreted by the thyroid gland to be synthesized

   f. Thyroid hormone aids in regulating metabolism, especially (protein, carbohydrate) and fat metabolism

   g. Thyroid hormones are required for normal development of the (central nervous system, circulatory system).

7. Complete the following statements concerning the parathyroid glands. Circle the words that best complete the statements.

   a. Parathyroid glands consist of (two, four) small, bean-shaped bodies that lie on the (anterior, posterior) surface of the thyroid lobes

   b. Parathyroid glands secrete the hormone (thyroxin, parathormone), which helps maintain homeostasis of blood (calcium, potassium) concentration

8. Select true statements concerning the adrenal glands. Write an "X" in the blank before each correct statement.

   ______a. Adrenal glands are also called *renals*

   ______b. Adrenal glands are located superior to the kidneys

   ______c. Adrenal glands consist of two parts that are dependent on each other

   ______d. The cortex is the inner portion of adrenal glands, and the medulla is the outer portion

   ______e. Adrenal medulla and the sympathetic nervous system help individuals meet certain types of emergency situations

   ______f. Adrenal cortex helps the body adapt to constant changes in the environment

TEST

9. Match the principal hormones of the adrenal glands with their correct functions. Write the correct numbers in the blanks.

______a. Dilates arteries, increases heart activity, dilates bronchi, increases level of glucose in blood by stimulating liver, increases amount of fatty acid in blood, and diminishes activity of gastrointestinal system

______b. Regulates development and maintenance of male secondary sex characteristics

______c. Regulates metabolism of sodium, chloride, and potassium; therefore, regulates water and electrolyte balance of the body

______d. Constricts arterioles and venules, resulting in increased resistance to blood flow, elevated blood pressure, and slowing of the heart

______e. Are responsible for female secondary sex characteristics and the cyclic changes in the vagina and uterus

______f. Is responsible for changes in uterine lining in second half of menstrual cycle, for development of maternal placenta, and for development of mammary glands

______g. Regulate carbohydrate as well as fat and protein metabolism, which affects essentially every cell in the body

1. Estrogens
2. Epinephrine (adrenalin)
3. Cortisol and corticosterone
4. Androgens
5. Aldosterone
6. Norepinephrine
7. Progesterone

10. Complete the following statements concerning the gonads. Write the correct answers in the blanks.

a. Several hormones, including estrogen and progesterone, are secreted from the

____

b. Androgens, including testosterone and andosterone, are secreted from the

____

TEST

11. Select true statements concerning the islands of Langerhans. Write an "X" in the blank before each correct answer.

______a. Islands of Langerhans are the same thing as the pancreas

______b. Islands of Langerhans manufacture two hormones: insulin and glucagon

______c. Insulin regulates normal use of sugar in the body

______d. Glucagon tends to decrease the blood glucose concentration

______e. Glucagon accelerates the conversion of glycogen to glucose in the liver

______f. Insulin increases the rate of glucose metabolism

12. Select true statements concerning other structures with endocrine functions. Write an "X" in the blank before each correct answer.

______a. The pineal body is a small organ that lies near the middle of the brain

______b. The pineal body influences sexual, skeletal, and mental maintenance in the later years of life

______c. The pineal body synthesizes the hormone melatonin, which exerts an inhibitory effect on gonads

______d. The thymus gland is located on the posterior side of the kidney

______e. Thymus increases in size after puberty

______f. Thymus is most active during prenatal life and in infancy

______g. The thymus gland secretes a hormone called thymosin, which promotes the growth of peripheral lymphoid tissue

______h. The thymus gland produces hormones that stimulate the production of small lymphocytes that function in the body's defense against infection

______i. The placenta secretes chorionic gonadotropin, estrogen, and progesterone, whose increased levels promote menstruation

______j. The placenta becomes a temporary endocrine gland during pregnancy

______k. The stomach wall secretes the hormone secretin, which stimulates the secretion of the gastric glands

______l. The small intestine wall secretes the hormone gastrin, which stimulates the secretion of pancreatic juices and bile

TEST

13. Describe the education and duties of one occupation related to the endocrine system.

ENDOCRINE SYSTEM
UNIT X

ANSWERS TO TEST

1. a. 1 e. 4
   b. 5 f. 3
   c. 6 g. 7
   d. 2

2. To secrete substances called hormones

3. a. Pituitary gland
   b. Parathyroid glands
   c. Thyroid gland
   d. Adrenal glands
   e. Islands of Langerhans
   f. Ovaries
   g. Testes

4. b, c, d, f

5. a. 3 e. 6
   b. 1 f. 8
   c. 7 g. 5
   d. 4 h. 2

6. a. Largest
   b. Two
   c. Thyroxine
   d. Proteins
   e. Iodine
   f. Carbohydrate
   g. Central nervous system

7. a. Four, posterior
   b. Parathormone, calcium

8. b, e, f

ANSWERS TO TEST

9. a. 2
   b. 4
   c. 5
   d. 6
   e. 1
   f. 7
   g. 3

10. a. Ovaries
    b. Testes

11. b, c, e, f

12. a, c, f, g, h, j

13. Evaluated to the satisfaction of the instructor

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